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PANZER VOR!

German Armor at War 1939-45

Frank V. De Sisto

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Text by Frank V. De Sisto
Color Plates by Laurent Lecocq

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INTRODUCTION

So much has been written regarding the exploits of Germany's World War Two "Panzertruppen". Therefore, I will dispense with the historic background of this force so that I may concentrate on items of interest to modelers: vehicle details (especially where they identify a change in "Ausführung", or "model" sequence), as well as basic unit organization (excluding support elements), vehicle colors and tactical markings. Note however, that my comments are extremely generalized and should only be considered as a very elementary basis for further study.

Unit Organization

The first Panzer Divisions were quite large and consisted of a Panzer Brigade, containing two Panzer Regiments. Each of these regiments contained two Panzer Battalions of three companies. Each of these companies (designated light or medium) contained a headquarters element and four platoons of light and medium panzers. In this form (there were, of course, many exceptions!) the Panzer Divisions fought in the 1939 Polish and 1940 French Campaigns, while in Norway only detached elements were used. The units proved to be too large to handle efficiently, while Hitler's passion for large numbers of divisions eventually caused the number of panzers in a division to be reduced, in order to form new divisions.

For the invasion of the Balkans and Greece in April of 1941, in most cases, the Panzer Brigade was eliminated as the highest element of a Panzer Division. A Panzer Division now typically contained one Panzer Regiment of two battalions, each of three companies, organized as before.

When Hitler struck the Soviet Union on June 22, 1941, the 17 Army Panzer Divisions that were committed were largely organized with a single Panzer Regiment of two battalions, each of three companies. However, since there are always exceptions to any "rules", several Panzer Divisions (3., 6., 7., 8., 12., 17., 18., 19. and 20.) had three battalions, each of three companies. This organizational structure still contained light and medium companies, as well as light and medium platoons within these companies. This structure remained essentially un-changed throughout 1942.

German Panzer Divisions were again re-organized in preparation for the summer offensives of 1943. They still retained a single Panzer Regiment, but many only contained a single Panzer Battalion. However, some companies were slowly starting to field homogeneous types of panzers in the medium class. Finally, from 1944, a much more rationalized Panzer Division emerged. The single Panzer Regiment was to contain two Panzer Battalions; one battalion contained four companies of Pz.Kpfw.IV, while the other contained four companies of Pz.Kpfw.V. Each company contained three platoons of five panzers each, plus two in the headquarters platoon, for a total of 17. Each battalion contained a headquarters company containing eight panzers. A Panzer Regiment's headquarters company also contained eight panzers. This gave the division a nominal strength of 160 medium panzers.

Independent heavy panzer units, equipped with the Pz.Kpfw.VI (Tiger I and Tiger II) were initially organized with two types of panzer, the Tiger I and the Pz.Kpfw.III. In August of 1942, a Heavy Panzer Battalion contained a headquarters company with two Tiger Is and six Pz.Kpfw.IIIs, and a single company of nine Tiger Is and ten Pz.Kpfw.IIIs. This battalion organization evolved to eventually comprise a headquarters company of three Tigers and three companies of 14 Tigers each, for a total of 45 Tigers per Heavy Panzer Battalion.

Sturmgeschütz unit organization also evolved as the war progressed. Initially independent Batteries were fielded containing six assault guns, four Sd.Kfz.253 command vehicles (one each for the battery commander and the three section commanders) and three Sd.Kfz.252 ammunition re-supply vehicles. Later they were expanded to contain a total of ten assault guns, with the deletion of the Sd.Kfz.253 for the battery and section commanders. Eventually they were organized in Battalions with three batteries containing 14 assault guns each, and a HQ containing three assault guns for a total of 45 in a Battalion. Late war Panzerjäger battalions were also organized in a similar fashion. As always, there were exceptions to this "rule".

Vehicle Colors and Camouflage

The actual colors that covered German panzers and other AFVs, military vehicles and ordnance changed over time. In the past, many students of the subject, especially modelers, worked on the assumption that all German panzers were finished in a solid dark grey color from 1939 until early 1943. In February of 1943, German panzers were ordered to be finished in a base color of dark yellow, with red-brown and dark green camouflage patterns applied in the field using containers of concentrated pigments of those two colors, which were issued with the individual panzers. These colors were used until the end of the war. In the past few years, this very simplistic view has largely been made obsolete by the original research of Thomas Jentz and Hilary Doyle. Using original documentation and personal observations made over several decades, these two gentlemen have made the following determinations:

From July 1937, until June of 1940, German Panzers were painted with a base of dunklegrau Nr.46 (later the code was changed to RAL 7021). This was over-sprayed with dunklebraun Nr.45 (later RAL 7017) in patches, so it covered roughly 1/3 of the item being painted. These colors were very dark and very similar in tone. So, it is extremely difficult to see the patterns on contemporary photographs. It should also be noted that this scheme covered equipment used in the Polish, Norwegian and French Campaigns.

After June 1940, all new equipment was to be finished in a single color, dunkelgrau RAL 7021. The first major campaigns where this color scheme would have been predominant would have been the conquest of Greece and the Balkan states. The advent of the campaign to conquer the Soviet Union in June of 1941 would also have seen German equipment painted in RAL 7021.

There were also colors developed to paint vehicles destined for "tropical" deployments, in this case, North Africa. Beginning in March of 1941, vehicles and equipment destined for that theater were to be finished in a two-tone scheme with a base color of gelbbraun RAL 8000, with patches of graugrün RAL 7008 covering 1/3 of the item. This was commonly applied over the previous dunkelgrau RAL 7021. One year later these colors were ordered to be replaced with braun RAL 8020 as the base with patches of grau RAL 7027 covering 1/3 of the item. Again, in both cases the colors were similar in tone; weathering (dust and sun-fading) made it difficult to determine any patterns by viewing contemporary photographs.

In February of 1943, the base color of all new equipment was changed to dunklegelb RAL 7028. To this base color could be added a camouflage pattern by using two colors that were issued in a concentrated form for application in the field. These were graugrün RAL 6003 and rotbraun 8017. While the base color of these vehicles can be "read" from contemporary photographs, it is difficult to

determine which of the two field-applied colors is which. This is due to such factors as method of application, the medium used to thin the paint (any liquid including water, oil, fuel, or conventional thinners such as turpentine could be used), fading from exposure to the sun, and dust. Later, in August of 1944, in order to save resources (most likely the paint itself, as well as shipping space within a severely strained logistics system), these colors were applied at the factory.

In September of 1944, the colors used to paint German equipment were ordered to be changed yet again. This time the usual primer coat of rot RAL 8012 (probably similar to what is now known as "red lead") was to be retained as the actual base color. Then the usual colors (dunklegelb RAL 7028, olivgruen RAL 6003 and rotbraun 8017) were applied at the factory, leaving almost half of the item covered in the base primer color. In December of 1944, orders were sent out directing that all equipment was to receive a base color of olivgruen RAL 6003. The remaining two colors (dunklegelb RAL 7028 and rotbraun 8017) would then be applied at the factory.

For operations where the territory was covered in snow, white was used to help German equipment better blend with its surroundings. This could take the form of white-wash, white paint and sometimes chalk. There is photographic evidence that some AFVs were produced with white as part of the factory-applied camouflage scheme, especially in the last months of the war.

So, aside from adding white for winter camouflage, there were seven distinct camouflage systems that could be seen on Panzers, other AFVs, military vehicles and ordnance in service, from 1939 through 1945.

Tactical Numbering of Panzers

As the use of panzers and their supporting AFVs became more widespread, and the formations grew larger and more dispersed, it soon became apparent that a means of quick identification of a unit's vehicles was needed, in order for a commander to retain control using his radio. Initially, geometric symbols and then small rhomboid-shaped plates with numbers were used. However, when tactically deployed, the distances between vehicles and other factors, particularly dust and mud (which when they came to rest on a vehicle, would obscure these markings), indicated that something more was needed.

As early as the Polish Campaign, some Panzer Regiments used relatively large two- and three-digit tactical numbers as a means of quick identification for command and control. These came in a variety of styles, sizes and colors. As the war progressed, most units settled on a simple three-digit system using Arabic numerals, where the first digit denoted the company, the second the platoon and the third denoted the individual panzer within the platoon. By mid-1944, a full-strength Panzer Division's Panzer Regiment usually contained two battalions, of four companies each. So, the I.Bataillon's companies would be numbered 1-4, while the II.Bataillon's companies would be numbered 5-8

Regimental command vehicles often had a Roman "R" in place of the first numeral. Battalion command vehicles often had the Roman numerals "I" or "II" in place of the first digit. Or, the first digit of a command vehicle could be an Arabic "0" (zero). Some heavy tank companies and battalions used a Roman "S", meaning "schwer" (heavy) in place of the first digit. Notably, the heavy tank battalion organic to the "Großdeutschland" Division (all other heavy tank battalions were non-divisional assets) used the Arabic letters "A", "B" and "C" instead of a number, to designate its companies, with "S", denoting "Stabs" (or Headquarters). Assault guns, especially those seen early in the war, used Arabic letters, such as "A", "B", "C", etc. to identify guns within a battery. Later, they normally used the same three-digit system as panzers.

Heavy panzer battalions used a large variety of colors for their numerals, often to designate a company within the battalion. The colors red, white, black, yellow, green and blue were often seen. Heavy panzer battalions often had numerals of different sizes, sometimes separated, to denote the different companies. More widespread was the use of numerals colored black, or red, both outlined in white, which were typically seen on nearly any other panzer. Any of these colors could also be used in outline style as well. The size of tactical numerals varied widely, with some being either very small, or quite large. Some tactical numbers were roughly painted by hand; most were painted neatly using stencils.

Four-digit tactical numbers were also sometimes seen later in the war. They were most often seen on armored halftracks, armored cars and some light reconnaissance tanks. In addition, sometimes tactical numbers were over-painted with a new number as unit organizations changed, still leaving the original number visible.

Dedication and Acknowledgements

This book is dedicated to the memory of the late Walter J. Spielberger. It was he who began the systematic study of German AFVs, especially panzers, so many decades ago. This book is but one small stone placed upon the foundation he created.

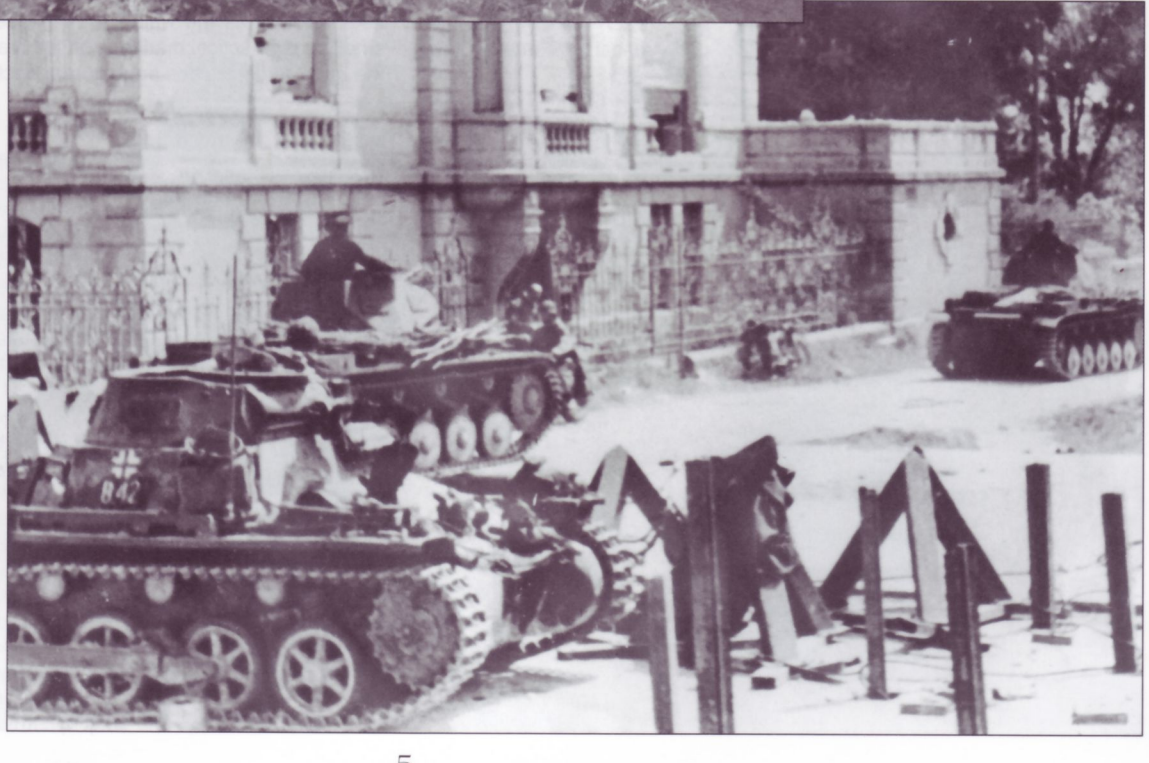
As always with a book of this type, one can never claim to have "done it" on one's own. First and foremost, I would like to thank this book's artist, M. Laurent Lecocq, for his extreme efforts on behalf of making the color plates as accurate as possible (with the caveat that the colors as printed here are only approximations of the actual colors as used on German panzers). Laurent cheerfully made numerous modifications as we worked towards our common goal. Merci, mon ami!

To identify the vehicles, units and uniforms seen within these pages I have consulted the published works of many authors, notably those of Peter Chamberlain, Hilary Doyle and Thomas Jentz, whose "Encyclopedia of German Tanks of World War Two (Revised Edition)" was my base reference. The more recent works by Jentz and Doyle, such as their Panzer Tracts series and Osprey New Vanguard booklets, were constantly to hand as were the following from this team: "Panzertruppen 1" and "Panzertruppen 2"; "Germany's Tiger Tanks, Tiger I & II: Combat Tactics", "Germany's Tiger Tanks, D.W. to Tiger I: Design, Production and Modification", "Germany's Tiger Tanks, V.K.45.02 to Tiger II: Design, Production and Modification", and "Germany's Panther Tank: The Quest For Combat Supremacy".

Other resources consulted were: the works of Karlheinz Munch and Wolfgang Schneider from Fedorowicz Publishing; "Blitzkrieg, Armor Camouflage & Markings 1939-1940" and "The Eastern Front, Armor Camouflage & Markings 1941-1945", by Steve Zaloga; the Osprey Men-at-Arms series, notably the recent five-part set, "The German Army 1939-45", by Nigel Thomas and Stephen Andrew; the works of Vladimir Francev and Charles Kliment were referred to regarding Czech tanks, while the work of Pascal Danjou provided information on French tanks; the Missing Links web site (www.missing-lynx.com), especially the posts of Martin Block regarding the distribution of German AFVs to operational units. Any errors of fact or of interpretation are solely my responsibility.

A Panzer crewman looks on as a Pz.Kpfw.I Ausf.A moves along a sandy forest track during the Polish Campaign of September 1939. Note the thick white balkenkreuz national insignia on the turret, characteristic of that campaign. The vehicle (which is a 2.serie/La.S chassis as denoted by the view port on the rear face of the superstructure) has additional fittings, which were ordered to be attached at various times during the year 1937. They include a "Nebelkerzenabwerfvorrichtung" (smoke candle deployment rack) on the hull rear, as well as armored cowls over the engine air intakes and exhausts. Note also the single engine exhaust mufflers on the rear of both fenders and what appears to be a pennant on the antenna.

A thoroughly bogged-down Pz.Kpfw.I Ausf.B stands idle while it is prepared for extrication. Note the man in the far background who is running a tow cable out to another vehicle. The panzer is devoid of markings and should be finished in the two-color scheme of dunkelgrau Nr.46 base with dunkelbraun Nr.45 oversprayed. It is recognizable as an Ausf.B by the longer engine compartment which housed a Maybach NL38TR gasoline engine, as well as the lack of exhaust mufflers on the rear of the fenders. Note the black panzer crew uniforms and the quite oversized appearance of the berets, which covered a padded inner helmet.



This Pz.Kpfw.I Ausf.A belongs to the 8.Kompanie of the Panzer-Regiment as denoted by the Tac number "842", which along with an outline-style balkenkreuz, is painted in white on the superstructure side. The panzer is laid-up next to steel anti-tank obstacles, probably in a French city during the 1940 campaign. Of note is the way in which the road-wheel hubs as well as the drive sprockets have collected a coating of mud and dust, while the tires have not. From this angle, it is identified as an Ausf.A by certain features of the suspension system such as: the way the track slopes downwards after the third return roller, as well as the girder and spring configuration. A pair of Pz.Kpfw.IIs in the background continue the onslaught.

A Pz.Kpfw.I Ausf.B leads a column consisting of wheeled vehicles and Pz.Kpfw.38(t)s, during the French Campaign. From this angle the panzer is identified as an Ausf.B by the lack of a vehicle jack stowed on the right front fender (although some Ausf.Bs did, in fact, have a jack stowed in that position). A close look at the superstructure, next to the radio antenna, as well as the front plate will reveal an inverted "Y" with three dots, which was the divisional insignia of 7.Panzer-Division, which was equipped with the Pz.Kpfw.38(t); this marking is seen on one of those panzers later in this book.

A column of Pz.Kpfw.III (Ausf.D, E or F) leads a Pz.Kpfw.I Ausf. B ohne Aufbau, which has been converted into a vehicle to carry maintenance equipment for the panzer company's repair and recovery sections, by the removal of its superstructure and turret. It was also known as "Instandsetzungskraftwagen I". Note the yellow gothic "I" (which appears to be a "J") that identifies the vehicle's function, on the rear corner of the engine deck, as well as the white "K" of Panzergruppe von Kleist. Note also the small square tactical markings on the rear turret face of the Pz.Kpfw.IIIs and the racks for jerry cans on their rear decks.

No Panzer Divisions took part in "Operation Weserübung", the invasion of Norway. However, a small number of panzers were deployed as part of "Panzer-Abteilung z.b.V.40". By April 25, 1940, after seeing combat, the unit reported 29 Pz.Kpfw.I, 18 Pz.Kpfw.II and four kl.Pz.Bef.Wg, as well as three "Neubau-Pz.Kpfw.IV as being operational. Some of its panzers came from Panzer-Regiment 15 or 31 from 5.Panzer-Division, which is indicated by the over-painted markings on the turret. These consisted of a segmented yellow-black-yellow band at the base of the turret. In this photo, the band as well as the Tac number (possibly "29") have been over-painted. The insignia of 3.Kompanie, z.b.V.40, is on the superstructure rear plate along with a white-outline balkenkreuz. This is a 2.serie/La.S chassis as denoted by the view-port to the left of the balkenkreuz. It has the retro-fitted armored cowls over the air intakes as well as "Nebelkerzenabwerfvorrichtung" (smoke candle deployment rack) on the hull rear.

An apparently fascinated group of children receive instructions on the running gear of a kleine Panzerbefehlswagen from one of the crewmembers. The vehicle has added armor on the superstructure front; note how the visors and MG ball mount are flush with the surface, compared to the previous photo. There is no bolted-on armor plate on the superstructure side at the fender top and no Notek blackout head-lamp has been fitted (although the device was accepted for use in June of 1939). The balkenkreuz national insignia consists of a black center with a white outline, but it has been over-painted on the bottom. Both crewmen wear the black M1934 uniform; one wears an M1935 "Feldmütze" (field cap), while the other wears the black M1934 beret over a padded inner helmet. This combination of uniforms, vehicle finish and features, as well as the weather and terrain may place this photo in the early part of 1940, prior to the French Campaign.

A motorcycle dispatch rider converses with the commander of a kleine Panzerbefehlswagen (Sd.Kfz.265), probably during the opening stages of "Operation Barbarossa" in June of 1941. At this time, the vehicle would have been painted in overall dunkelgrau RAL 7021; there are no markings visible. This vehicle has the added "Rahmenantenne" (frame antenna), which was sometimes seen in service after the campaigns of 1939 and 1940. Note how the posts that support the frame are themselves reinforced with strips connecting them to the superstructure. The motorcyclists are wearing their gas mask canisters slung across their chests, a common practice. The motorcycle combination in the background is based on the BMW R75, which is identified by the characteristic framework forward of the fuel tank; the near one is a DKW NZ 350.

In a second view of the same kleine Panzerbefehlswagen, a solo-motorcycle dispatch rider as well as a Panzer crewman (sensibly wearing his steel helmet while away from his mount) quickly scribble information from the commander of the panzer. The motorcycle is a DKW NZ 350. Note the extensive stowage on the panzer, including: small logs wired together to help in overcoming soft ground, spare road-wheel, box, tarp, etc. This panzer has a stowage locker behind the superstructure, which carries a black balkenkreuz with a white outline.

A group of Pz.Kpfw.Is and IIs, representing at least a company-sized detachment, receive maintenance amidst the snows of winter. There are no discernable markings on any of the panzers, while the condition of the Pz.Kpw.IIs indicate that no retro-fitted armor is installed. The various crewmen visible wear the black M1934 panzer uniforms, some with M1935 greatcoats. Some men wear M1934 berets, while one hardy soul to the right is getting by with a pull-over sweater. The photo probably dates from the winter of 1938-39.

In blizzard-like conditions, another Panzer-Kompanie is photographed during training. The snow covering the vehicles makes it impossible to determine which models they are, except that they are Pz.Kpfw.Is and Pz.Kpfw.IIs. Several crewmembers pose for the camera wearing the M1934 black panzer uniforms and berets.

While infantrymen shelter in the lee of some buildings, a pair of Pz.Kpfw.II (they are either Ausf.As or Bs) attempt to clear the way in Warsaw during the Polish Campaign of September 1939. Both vehicles have early features such as split hatches on the turret roof, rounded bow, idler wheels with spokes and no Notek black-out head-lamp. The near panzer has a large white balkenkreuz national insignia on the turret side as well as a white "R03" tactical number, indicating that it is from a Panzer-Regiment's command element. The numbers and national insignia are toned down with what appears to be mud, which has also softened the edges of the characters. These panzers would have been finished in the two-tone system of dunkelgrau Nr.46 base with a dunkelbraun Nr.45 overspray.

This Pz.Kpfw.II (Ausf.A, B or C), is undergoing a rather extensive bit of maintenance in a field workshop. The rear half of the superstructure has been lifted away to allow the engine to be removed for easier access to its components. A crewmember stands in the open bow hatch, where he could access the panzer's transmission and final drive unit. The 2cm KwK30 main gun, as well as the co-axial MG34 have been removed from the mantle for disassembly and cleaning. The panzer has some of the later retro-fitted features such as turret, superstructure and bow supplementary armor, but retains the original split hatch arrangement for the commander, rather than the vision cupola. There is no Notek head-lamp fitted. The markings consist of two small yellow dots representing the 2.Panzer-Division (as of November 1, 1939), while the white-outlined balkenkreuz national insignia is split between the superstructure side and the antenna storage trough. The environment, vehicle features and markings indicate this photo may pre-date the French Campaign of 1940. If this is the case, the panzer should be finished in the two-tone scheme of dunkelgrau Nr.46 base with dunkelbraun Nr.45 overspray.

This Pz.Kpfw.II is an Ausf.A, B or C photographed during training. It carries a small rhomboid plate behind the "Nebelkerzenabwerfvorrichtung" (smoke candle deployment rack) with a solid-colored (probably yellow) "306" as a Tac number. Further on, there is a bit of the balkenkreuz national insignia on the rear face of the superstructure in white outline form. Another rhomboid plate, as well as another balkenkreuz can be seen on the superstructure sides, behind the stowage. Another point to note is not only the angles of the spring bundles for the suspension system, but the fact that some have a different number of spring plates within a bundle. The snow and the style of markings indicate that this photo may have been taken in the winter of 1939-40, during the so-called "Sitzkrieg" in the west prior to the French Campaign. The lack of the tail-lamp from the Notek black-out driving system also makes this more likely. The color scheme should be the two-tone type consisting of dunkelgrau Nr.46 base with dunkelbraun Nr.45 overspray.

This column of panzers moves up a slight incline along a tree-lined road, probably during the French Campaign of 1940. Note the characteristic girder on the suspension of the near panzer, which identifies it as a Pz.Kpfw.II Ausf.b (note that the designation was in lower case letters; this is not a miss-print). There are no cupolas on the tanks, although these were retro-fitted to the Pz.Kpfw.II series later on. The next furthest vehicle has a tactical number ("511") on the turret rear, probably in yellow; the near vehicle's number is obscured by stowage on the engine deck. The far tanks are difficult to identify, but may include a Pz.Kpfw.35(t) or 38(t).

It is a bit difficult to determine which model of a Pz.Kpfw.II (Ausf.A, B or C) one is viewing unless certain features such as the vision ports can be clearly seen. The panzer in the foreground can be any one of these, but it does have a visible retro-fitted feature, the addition of 20mm armor to the turret front (note the bolt heads towards the top of the curved portion to the side of the mantle). When this was done, the superstructure front also had additional 20mm armor fitted, as did the bow. In the latter case, its profile was changed from round to square, giving the armor the added benefit of being "spaced". This panzer is marked as being from a Panzer-Regiment's II.Bataillon (II 05), in large white-outline characters on the turret, as well as small solid characters on the superstructure side. There is also a white-outlined balkenkreuz national insignia further back on the superstructure side. The lack of a Notek black-out headlamp, as well as the hard-surface road, indicate that the photo may have been taken during the French Campaign of 1940. Colors should then consist of the two-tone scheme of dunkelgrau Nr.46 base with dunkelbraun Nr.45 overspray.

A pair of Pz.Kpfw.38(t)s and a Pz.Kpfw.II rest in a French town, amongst abandoned British transport (a pair of Bedford lorries to the right and a Guy "Ant" at left), while two officers and a motorcycle dispatch rider stand at left. There is a marking on the side of the turret of the Pz.Kpfw.II, but it is not discernable in the photograph. Note how the camouflage pattern of the British lorries has been continued on their canvas "tilts".

A pair of captured "Tommies" of the BEF (British Expeditionary Force) ride a Pz.Kpfw.II (Ausf.A, B or C) through a coastal French town, while a French Army medic loiters behind an ambulance. The panzer has the retro-fitted armor on the turret front, superstructure and bow; note also a welded patch on the lower edge of the turret, beneath the first numeral of the Tac number ("141"). This is painted in white outline form. The superstructure side has a black balkenkreuz, outlined in white as well as the divisional sign for the 7.Panzer-Division (an inverted "Y" followed by three dots) painted in yellow. Modelers should also note the various shades and patterns of the metal on the 2cm KwK30 gun tube; they should not be confused with painted-on stripes.

This photograph of a Pz.Kpfw.II (Ausf.A, B or C) was possibly taken surreptitiously by a French citizen, as the panzer passed through his or her town. Note the other local citizens standing warily out of the way between the gate-posts of the building across the street. The panzer has the original split hatch as well as the retro-fitted "Nebelkerzenabwerfvorrichtung" (smoke candle deployment rack) fitted over the exhaust muffler. The large Tac numbers on the turret ("242") as well as the balkenkreuz on the turret rear characterized panzers assigned to the 7.Panzer-Division (see photos elsewhere in this book).

This Pz.Kpfw.II approaches a railroad track where locomotives and civilian vehicles have been placed as road blocks. Note the open hatches on the rear deck, which were used to provide access for engine components. The man exposed outside the vehicle would seem to indicate the lack of a direct threat to the panzer. There are no easily-visible markings to be seen from this angle, although there appears to be a rhomboid plate just above the engine exhaust muffler.

This pair of Pz.Kpfw.IIs (Ausf. A, B or C) leads a column of German armor along a road. They are followed by a Pz.Kpfw.I and Pz.Kpfw.III, and are accompanied by infantrymen who are moving along the shoulder of the road. Both Pz.Kpfw.IIs have the modifications introduced due to experience reports from the Polish and French Campaigns. These include bolted-on armor on the turret fronts, superstructure fronts and a spaced-armor array covering the originally-rounded bow with angled plates. There was also a new circular commander's cupola with periscope vision blocks that replaced the original split-hatch design; note the head protection pad on the opened hatch lid. The armor addressed the problems encountered by enemy use of anti-tank rifles, while the cupola enhanced the vision of the commander when the panzer was buttoned-up. With the modifications shown, the panzer should also have been fitted with the Notek black-out driving system; in this case it has not. The markings, "6L..." (in yellow) do not conform to normal practice, but were used by the 4.Panzer-Division to designate "leichter" (light) tank companies. However, it appears that the divisional insignia on the superstructure front plate has been obscured. Note how the balkenkreuz national insignia (with white outline) on the superstructure side, carries over to the radio antenna's protective storage trough.

These Pz.Kpfw.IIs (Ausf.A, B or C) have all of the designated retro-fitted items. These include a circular commander's cupola with periscope vision blocks; additional armor on the turret front, superstructure front and hull front; and, fender-mounted Notek black-out driving head-lamp. Lengths of spare track links that are stowed liberally on the glacis, superstructure front and sides, indicate that the veteran crew is expecting to encounter enemy action in the near future. It appears that the divisional sign for the 5.Panzer-Division (an inverted "Y", with a single dot) is on the superstructure armor, while no other markings are visible. The vehicle should be painted in the monotone dunkelgrau RAL 7021 scheme, while its configuration and the locale possibly place it in the Balkans or in Greece during April of 1941.

This Pz.Kpfw.II (Ausf.A, B or C) straddles railroad tracks while scouting a tunnel entrance. One crewman is boarding the panzer from the side (a dangerous procedure, since the driver cannot see him and may accidentally move the vehicle at the wrong moment), while the commander observes from his split hatches. The two soldiers on the rear deck are motorcyclists as is apparent by their special M1934 "Kradmantle" rubberized weather-proof overcoats and the goggles on their helmets. As the Pz.Kpfw.II series became obsolete as a battle tank, it was relegated to reconnaissance duties; therefore it would not be unusual for it to operate alongside motorcyclists.

A pair of Pz.Kpfw.IIs (Ausf.A, B or C) shelter in the lee of a ridge as an artillery barrage bursts in the distance. The panzer closest to the camera has a large stowage bin added to the near fender, which was a retro-fitted item. The later circular commander's cupola is also fitted. The Pz.Kpfw.II to the right also has the cupola fitted. The panzer closest to the camera has a white three-digit tactical number on the turret rear (possibly "212") as well as a white-outline balkenkreuz national insignia below it; this is a rather unusual arrangement. The crew members of the near vehicle are in shirt-sleeve order, and wear their berets over the padded inner helmet.

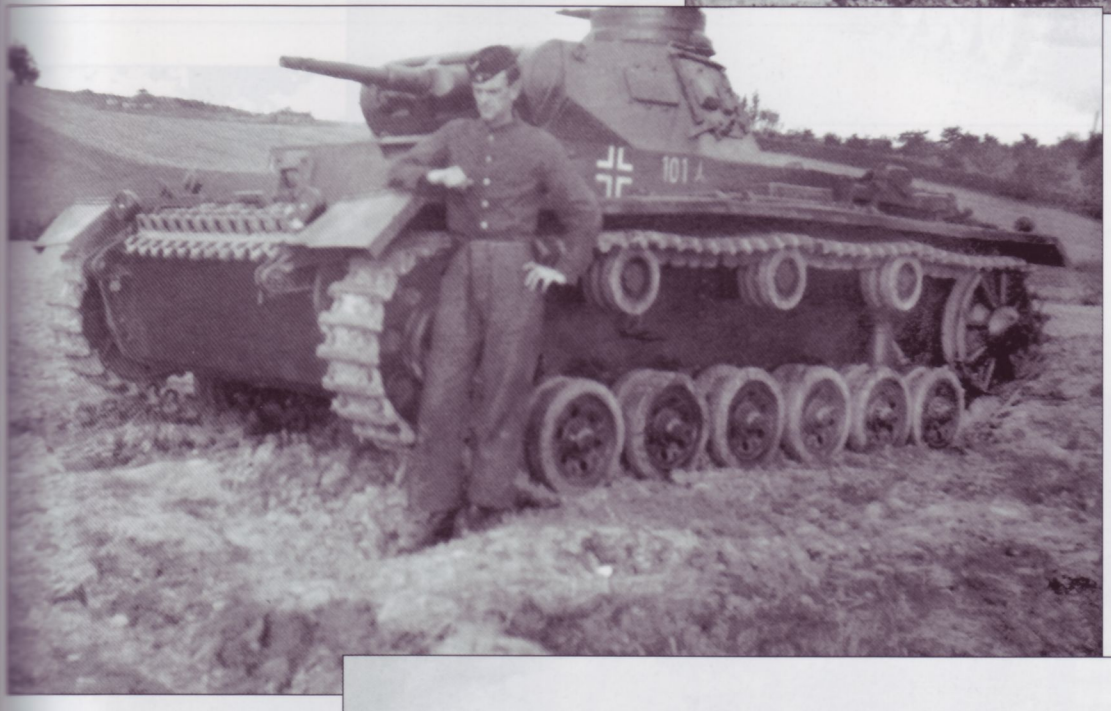
This trio of Pz.Kpfw.II (Ausf.A, B or C) crosses a river behind a pair of Pz.Kpfw.IIIs. They are fitted with the circular vision-block-equipped commander's cupola as well as the large stowage bins on the fenders, while the nearest panzer has the additional armor on its gun mantle and a Notek head-lamp next to the standard head-lamp on the fender. All are cluttered with stowage items. Also of note is the pattern of metal-work on the 2cm KwK30 gun tube, which makes it appear as if stripes are painted on it.

This pair of Pz.Kpfw.IIs (Ausf.A, B or C) break cover as they emerge from a forest. Both are fitted with extra armor plating over their curved bow sections, which as a result, are now squared-off. This extra armor was fitted as a result of experience in the Polish Campaign, where Polish anti-tank rifle fire was often quite intense. The lead vehicle is fitted with the original split hatch for the commander, while the only marking visible is a white-outline balkenkreuz.

A pair of Pz.Kpfw.IIs (Ausf.A, B or C) bring up the rear of a column of panzers. The near panzer carries a black balkenkreuz with a white outline as well as a Tac number in yellow ("312") on the rear face of the turret. It has the early split hatch for the commander as well as a large stowage locker on the right fender. Stowage includes 7.92mm ammunition boxes secured on the flat part of the engine deck.

This Pz.Kpfw.II shows the retro-fitted armor arrays quite well. Note the bolt patterns on the turret face as well as the superstructure front plates, which indicate the fitting of the extra armor. The bow's shape was also changed from rounded to angular with the addition of the upper and lower glacis plates. Note the storage box fitted to the fender as well as the spare track and tow cable fixed to the glacis plate. The forward part of the Tac number on the turret, a large "3", is the only numeral completely visible. Note how the road-wheel hubs have become dust-covered, while the tires have not, as well as the mud covering the spring assemblies; the panzer is also covered in so much dust that it appears much lighter in color than it actually was.

A pair of Pz.Kpfw.III Ausf.Es cross a rough field during a training exercise. Note especially how the panzer's torsion bar suspension easily and smoothly conforms to the broken ground. The Pz.Kpfw.III was the first modern main battle tank, possessing features that are still seen on tanks to this day. For instance, the turret crew had specific duties; the commander coordinated the actions of his crew and the actions of his panzer with others; the loader loaded the main weapon, while the gunner sighted and fired it. This is in contrast to other contemporary tanks where each of the turret crewmen was usually assigned more than one specific task (for instance, some French tanks had a commander who also loaded and fired the main weapon). The remainder of a Pz.Kpw.III's crew (the driver and the radio operator) also had specific tasks that they performed in a combat situation. Thus, a properly trained crew could coordinate their actions to optimize their panzer's performance as an individual combat vehicle and concentrate their efforts in support of neighboring panzers.



This Pz.Kpfw.III Ausf.E belonging to the 5.Panzer-Division is seen during training. It belongs to the 1.Kompanie of Panzer-Regiment 31. Note the small tactical numbers ("101") painted in yellow next to the divisional insignia (an inverted "Y" with one dot). The national insignia is in the white outline form, while the regimental insignia, a "Devil's Head" is just visible on the front edge of the turret side. No machine guns are fitted, while the only extra stowage other than the standard vehicle items is a length of spare track across the glacis plate. The crewman wears M1933 denim work clothes (in the later and more practical "reed-green" color) along with his black M1935 Feldmütze (field cap).

A close-up of the same panzer reveals more details of the "Devil's Head" regimental insignia, which has been depicted as being red, with white eyes and teeth. Note also the weld beads on the turret and mantle, the vision block and its splash guard, the lifting hook, the split turret side access doors and their hold-open lock.

A damaged Pz.Kpfw.I Ausf.E awaits a recovery un on a road in France during th 1940 campaign, while German mechanized colum advances. The condition of th suspension (broken track an missing front road-whee indicates that the panzer ma have struck a mine. Note th group of French prisoner walking towards the panze The only visible marking is dust-covered white-outlin balkenkreuz national insign on the rear plate of th superstructure. The visible cre members wear a combinatio of M1934 black panzer uniform items and M1933 reed-gree denim fatigue items.

This worn-appearing Pz.Kpfw.III Ausf.E is parked on a street in a French town during the campaign of 1940; note the sign on the tree behind the panzer. Barely visible on the superstructure side, just forward of the white-outlined balkenkreuz, is the "XX" insignia of the 9.Panzer-Division, which took part in this campaign as part of Heeresgruppe B (Army Group B). The tracks are the narrower 38cm type, with smooth faces on the links. Note the large flag attached to the rod antenna, as well as the smaller one on the bow, next to the fender.

This pair of knocked-ou Pz.Kpfw.III Ausf.Es await recovery b workshop units. They appear to be th victims of either mines of large calibe artillery, as the photo indicates that massive external explosion has ripped much of the suspension from them They are identified as Ausf.Es by th split hatches on the turret sides. Th only visible marking is a white-outlin balkenkreuz national insignia on th panzer at the right.

A Pz.Kpw.III Ausf.E moves along a road, past a Panzer-Division's headquarters (note the pennant on the right side of the photo, and the command pennant on the sedan parked behind the soldier at left). The panzer has a Notek black-out driving head-lamp in a most unusual position on the center of the glacis plate; normally these devices were fitted on the driver's side fender. Note also that the soldier on guard duty at left is wearing the short ankle boots with gaiters, something not commonly seen when the Pz.Kpfw.III Ausf.E was a first-line panzer.

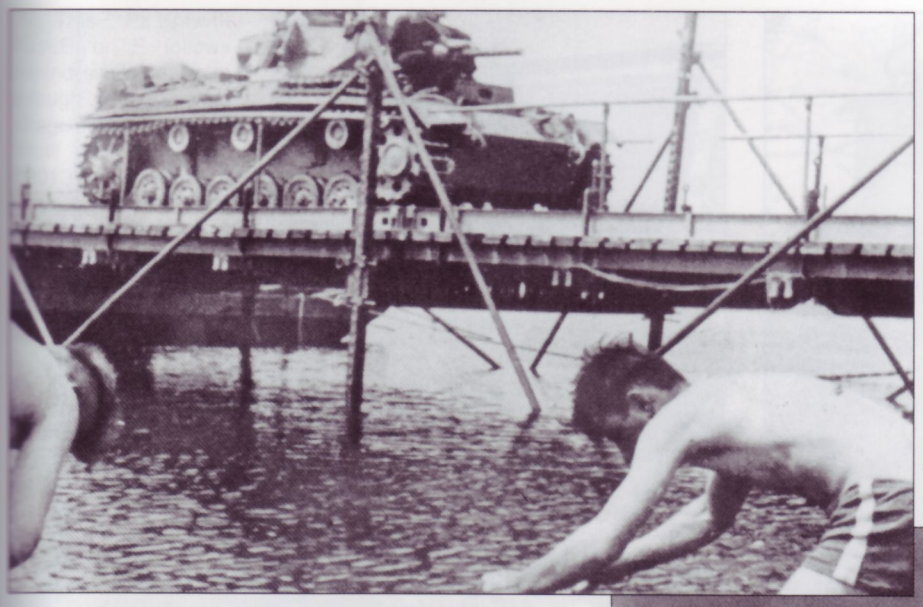
The Pz.Kpfw.III Ausf.F introduced the small armored cooling vents for the transmission on the glacis plate, as seen here. This panzer seems to be un-marked and does not mount a Notek head-lamp, while the surrounding elements suggest that the photo was taken during the French Campaign of 1940.

This Pz.Kpfw.III Ausf.E or F was at one time fitted out as a "Tauchpanzer" for fully submerged operation. A number of different panzers were so converted for the aborted invasion of the United Kingdom, code-named "Operation Seeöwe" (Sealion); some were used by the 18.Panzer-Division to cross the Bug River in the initial stages of the invasion of the Soviet Union, "Operation Barbarossa". This panzer is identified as a submersible by the flange around the rim of the turret front plate (where a canvas cover was fixed to seal the mantle area), as well as the cover on the engine air intake grills. There is a storage bin on the turret rear as well as a Notek head-lamp on the fender, both retro-fitted items. The markings on the turret side consist of a divisional insignia (upright "Y" with three horizontal strokes) in yellow and a tactical number (101) designating the panzer as belonging to the 1.Kompanie, in white. A white-outlined balkenkreuz, with black center, is below the turret on the side of the superstructure. It was common for the insignia of Panzer-Regiment 18 to be displayed on the turret stowage bin's rear face.

This first of three photos depicting destroyed Pz.Kpfw.III Ausf.Fs, shows a panzer with heavily damaged suspension system, including broken tracks, a missing pair of front road-wheels, and a missing drive sprocket. The next photo will show how much more the vehicle was damaged. The far vehicle has suffered fire damage (as seen in the next photo), which may account for its "nose-down" attitude; intense heat could soften the torsion bars, causing the panzer to "sink" under its own weight.

This second of the three photographs depicts a total of three knocked-out Pz.Kpfw.III Ausf.Fs. The panzer in the foreground appears to have fire damage on the engine deck (note the road-wheel, minus the rubber tires to the right), while the far panzer has lost its front superstructure plate.

In this final photo of the set, a group of Heeres (Army) cavalrymen pass the panzers, no doubt wondering at the demise of such formidable machines of war, while their less-glamorous steeds plod steadily onward. In this photo, a shirtless panzer crewman (note his trousers and boots) inspects the rear deck of the burned-out panzer. It is apparent that there is a rectangular patch of white paint just below the Pz.Kpfw.IIIs commander's cupola, whose significance is not known.



This Pz.Kpw.III Ausf.E or F carefully makes its way across a bridge constructed by an engineer bridging column; note the prefabricated appearance of the bridge's construction. In the foreground, two soldiers take advantage of the river to refresh themselves. The panzer has appliqué armor bolted to the upper glacis as well as a plate on the superstructure front. There is also a storage bin on the turret rear wall. The way the turret reflects light makes it impossible to read what may be a tactical number on its side wall.

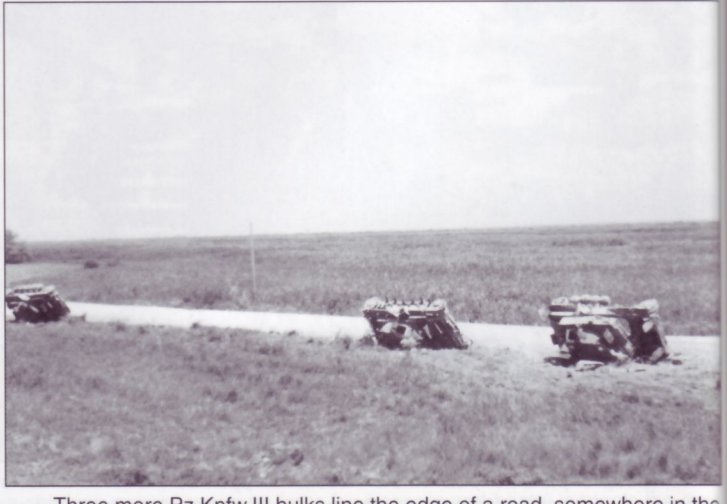
This Pz.Kpfw.III (Ausf.E or F) has the turret stowage bin fitted. It is heavily-laden with external stowage on the fenders and engine deck, where an aerial recognition flag can just be seen, directly below the crewman. Most of the panzer's markings are obscured, but a possible number "5" can be seen on the turret bin, while a white-outline balkenkreuz national insignia can be seen on the rear plate.

A group of panzers rests on the Russian steppes as the commander of the lead vehicle, a Befehls Panzer III Ausf.E, takes stock of the situation. The panzers at rear are Pz.Kpfw.IIs, which were by this time relegated to the reconnaissance role. The Befehlspanzer is recognizable by the "Rahmenantenne" (frame antenna) on the rear of the superstructure, the plugged hull MG port and the ball-mounted single MG34 where the normally-seen twin MG34s were in the gun mantle. It is then assumed that the 3.7cm KwK L/46.5 is a dummy mounting. Unlike the previous photo, this panzer has the Notek head-lamp mounted in the more conventional position on the driver's side fender.

A partially-camouflaged Pz.Kpfw.III Ausf.E stands idle while awaiting the order to continue the assault. While the camouflage is not especially elaborate, it succeeds in breaking up the vehicle's outline and also blends in well with the surrounding trees. This panzer has a Notek head-lamp mounted on the driver's side of the glacis plate, but is otherwise devoid of any other unique or unusual features.

A shirtless panzer crewman visits the grave site of three dead comrades, which have been embellished with a Pz.Kpfw.III cupola, a Nazi flag and some lengths of track.

A crewman hands a 5cm round to his comrade in the turret of a Pz.Kpfw.III, probably an Ausf.F. A number of later Ausf.F were produced with the short 5cm KwK38 L/42, while some had this weapon retro-fitted during major overhauls. This panzer has a winter white-wash applied, but is otherwise devoid of any other special items of interest. The crewman wears the M1935 greatcoat over his uniform with his M1934 field cap perched at a jaunty angle on his head. Note the ammunition boxes leaning against the road-wheels at the bottom of the photo.

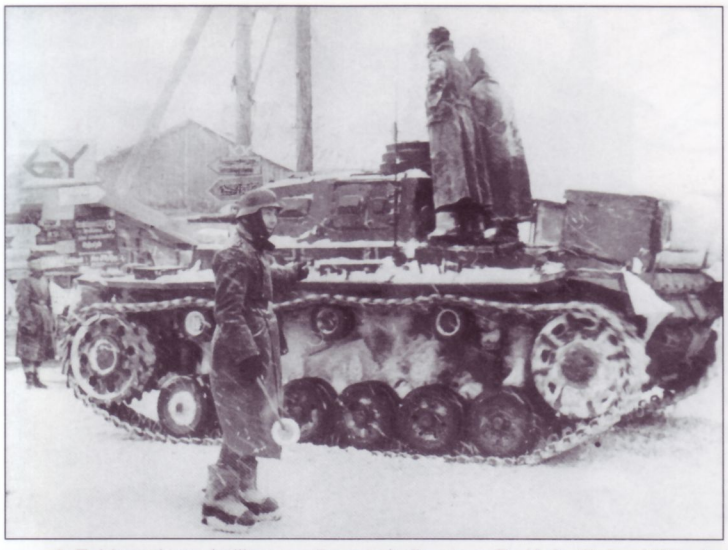


Three more Pz.Kpfw.III hulks line the edge of a road, somewhere in the vastness that characterized the Soviet Union. The panzers have been uniformly flipped-over on their sides, probably as a result of being roughly pushed towards the road's edge to clear it for traffic.

This Pz.Kpfw.III Ausf.E or F follows behind similar panzers through a mud-bound village street. There is a small tactical number ("201") in white on a plate attached to the storage rack, and a white panzer rhomboid with a small "2", designating this as a panzer of the 2.Kompanie's command element. Note the configuration of the rear fender's support for the flipped-up mud flap, and the Nazi flag on top of the stowage, used as an aerial recognition device.

With the advent of the Pz.Kpfw.III Ausf.H (pictured here), a new cupola was added to the turret as was a circular vent on its roof; the rear face of the turret was a continuous plate, which the cupola did not intrude upon. The 5cm KwK38 L/42 fitted within a newly-designed external mantle was standard armament for most of these panzers; note the view ports on either side of the gun as well as the armored sleeve around the co-axial MG34. A new, pivoting driver's visor was fitted, while the hull's bow, glacis and superstructure all have bolted-on 30mm appliqué armor plates; note how they are fitted around the MG34, driver's visor and tow points. A Notek head-lamp is mounted on the driver's side fender, while the conventional head-lamps do not have slotted black-out hoods fitted. The visible marking next to the driver's visor (a yellow inverted "Y" with a single vertical stroke) represents the 2.Panzer-Division, after 1941. There also appears to be a small white outline square on the side of the turret, towards the front.

This Pz.Kpfw.III Ausf.G/H fords a small stream, while pioniere troops (combat engineers) work to keep the bank in condition to support a crossing by a large number of vehicles. Note the tow cables at the ready and the spare tracks stored on the glacis plate between the two transmission cooling-air cowls. The two visors on the mantle are open and there is a Notek head-lamp on the driver's side fender. No markings are visible in this head-on view.

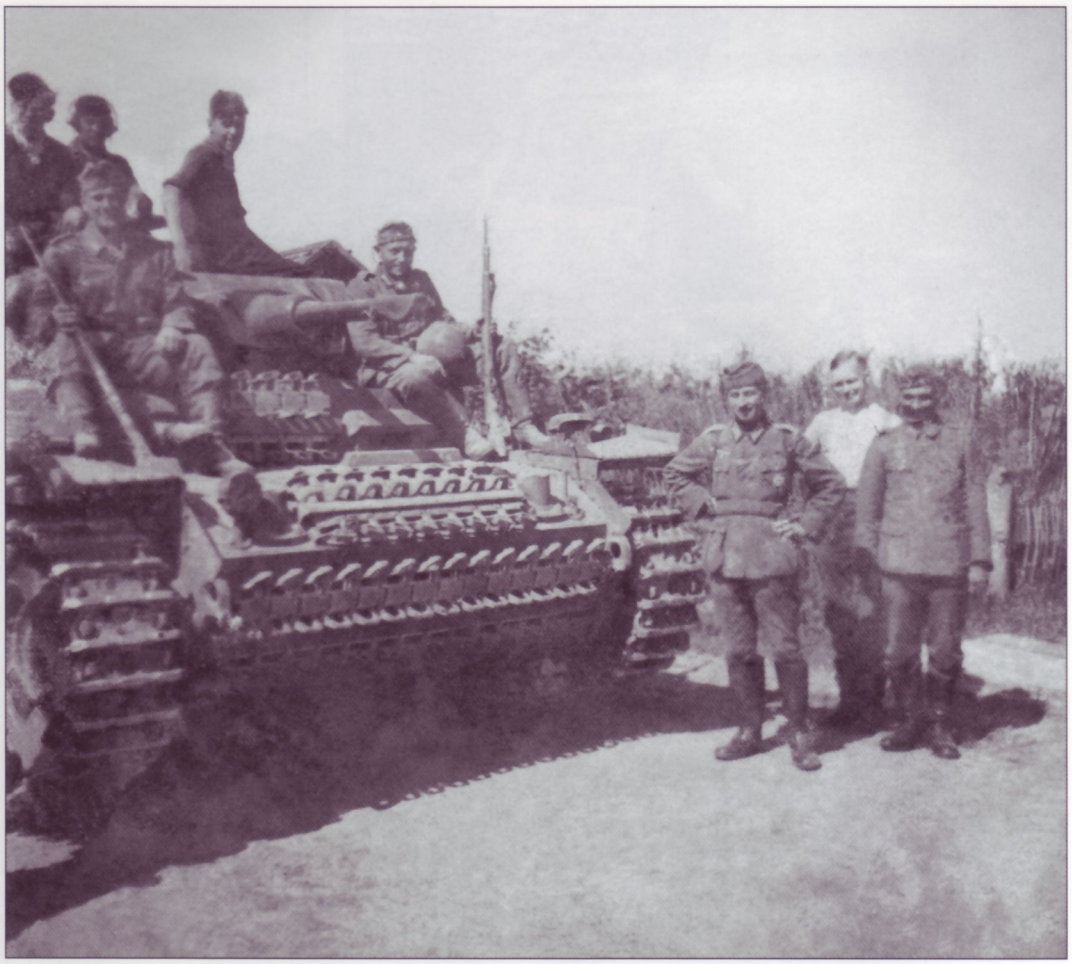


A Feldgendarm (military policeman) directs a Pz.Kpfw.III Ausf.H to its assembly area, somewhere on the Ostfront. The panzer is recognizable as an Ausf.H by the new style of commander's cupola fitted to the turret, as well as the configuration of the turret's rear wall. This model also featured a new transmission and final drive, which necessitated the introduction of a new drive sprocket. Note the directional signs on the post, just in front of the panzer; among the insignia displayed is that of the 7.Panzer-Division, an upright "Y". On the trees just behind the panzer can be seen the "XX" of the 6.Panzer-Division. These are both the post-1941 versions of the respective division's insignia.

This fine photo clearly shows all of the main recognition features of the Pz.Kpfw.III Ausf.J: later drive sprocket and idler wheel (introduced on the Ausf.H); superstructure front plate of 50mm thickness with ball-mounted MG34 and hull side extensions drilled to accept tow hooks. Note the way the mud flaps could be folded back onto the fenders and the black-out driving slits covering the conventional head-lamps. There is no Notek head-lamp mounted. There is a white-outline balkenkreuz national insignia on the side of the superstructure and a white tactical number ("?33") on the side of the turret.

The two radio antennae and the cupola identify this Pz.Kpfw.III as a Befehlspanzer III Ausf.H. Note also the dummy 5cm gun on the mantle as well as the ball-mounted MG34. In the center of the photo stands a Pz.Kpfw.II (Ausf.A, B or C), while in the background are a pair of Sd.Kfz.251s.

A Pz.Kpfw.III Ausf.J is shown here. The sides of the hull were extended and drilled for tow hooks and the armor basis was increased to 50mm. Note also that lengths of track were stored on any surface possible as extra protection against Soviet anti-tank rifles. This panzer seems to have some friends in the infantry who appreciate its presence in their area of operations.



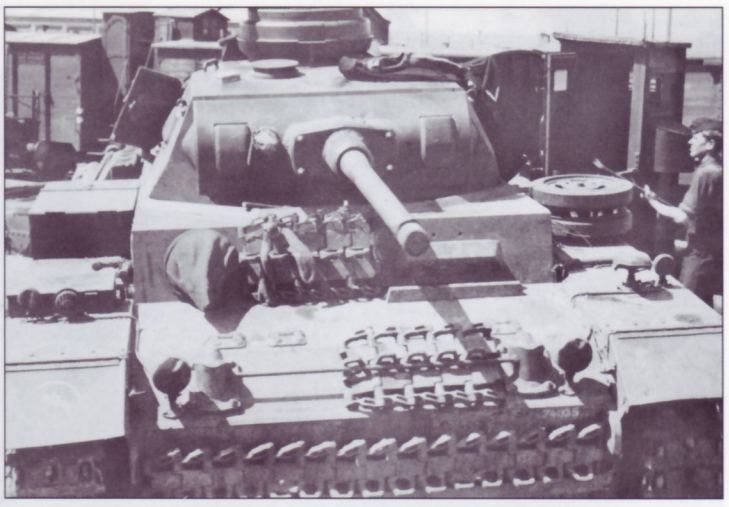
This Pz.Kpfw.III Ausf.J moves towards the front loaded down with almost 20 infantrymen. Note the new-style drive sprocket (introduced on the Ausf.H) and idler wheel as well as the hull extensions, which are drilled to accept tow hooks. There is a Notek head-lamp beneath the soldier perched on the near fender; note that both fenders lack their mud flaps.

A relatively neatly white-washed Pz.Kpfw.III Ausf.J moves along a road during a winter on the Ostfront. There is a tactical number, in white on an un-camouflaged rectangle on the turret sides, possibly "212". Again, note the new drive sprocket as well as the new idler wheel, and the hull extensions drilled to accept a tow hook. Behind the panzer is a uniquely-Soviet snow vehicle, called an "Aerosan", in this case being towed by a local pony. The captured Aerosan sports a balkenkreuz on the nose of its white-painted body.

This Pz.Kpfw.III Ausf.J, shows its chassis number, possibly 68435 on the superstructure front, to the left of the driver's pivoting visor. There is also a single-digit tactical number, a white-outlined "7" on the forward side of the turret, and a sprayed outline of a European Bison just behind it, identifying this panzer as belonging to Panzer-Regiment 7, originally of the 10.Panzer-Division. It flies a pennant from its rod antenna. Unusually, the crewman perched on the turret wears his steel helmet.

This Pz.Kpfw.III Ausf.J is an excellent example of how the Germans would improvise a winter camouflage scheme, in this case using chalk. Note the "scribbled" manner in which the white color has been applied. In the background is a pair of mittlerer Schützenpanzerwagen Sd.Kfz.251s, probably Ausf.Bs.

Taking no chances on being attacked by friendly aircraft, this crew of a Pz.Kpfw.III Ausf.J gestures and waves their Nazi aerial recognition flag towards the sky. This panzer has a rather worn white-wash applied; note how the area behind the removed track storage on the bow has not been covered in white.



This Pz.Kpfw.III Ausf.J, chassis number 74035 belongs to the 24.Panzer-Division as indicated by the leaping horse and rider insignia on the fender, at left. There is also a diagonal arrow next to the driver's pivoting visor, which was probably an alternate divisional insignia. This panzer is armed with the longer L/60 version of the 5cm KwK39 main gun. Note the arrangement of the various lights and the horn, as well as the power conduits that run to them. The panzer also has covers on all of its weapons, as well as spare tracks stored on the front end for extra protection.

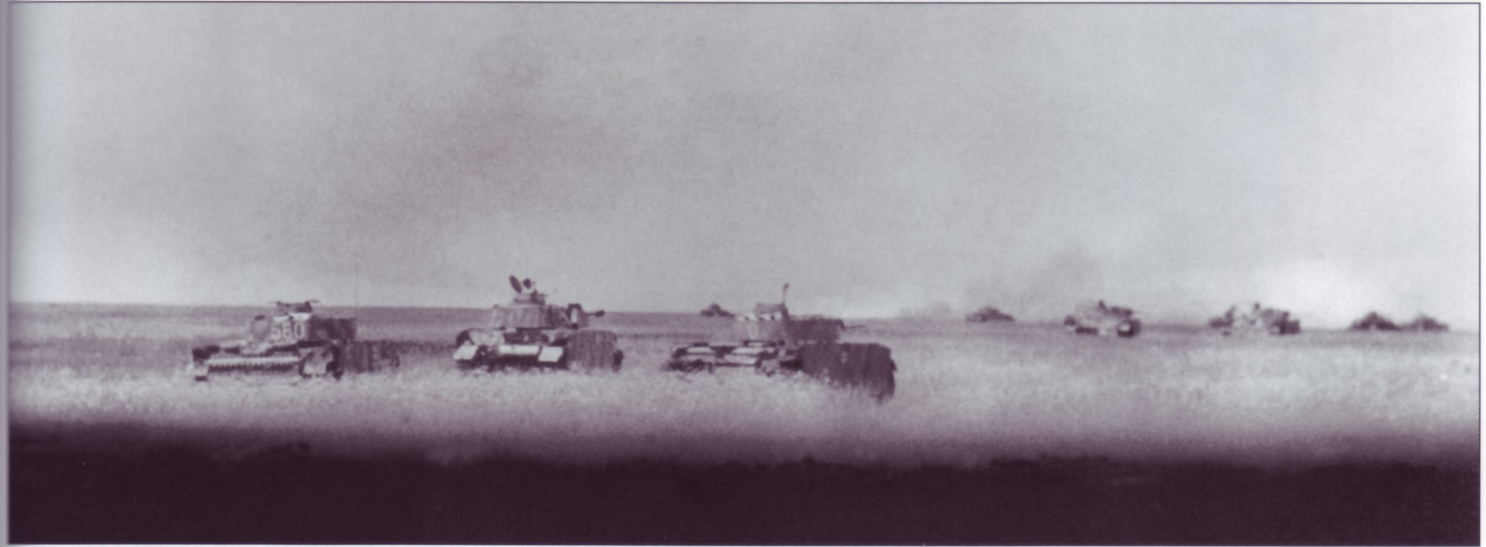
A Befehlspanzer, based on the Pz.Kpfw.III Ausf.J or L sits next to a peasant's home on the open steppes of the Soviet Union. There are two rod antenna masts, one on either side of the panzer, as well as 20mm spaced armor on the mantle and the superstructure front plates. This panzer also seems to be mounting the longer L/60 version of the 5cm KwK39 main gun.

This Pz.Kpfw.III Ausf.J or L has the frame for additional spaced armor on the mantle, but the armor itself has not been fitted, due to production shortfalls. That on the superstructure front has been fitted. This particular panzer is unique in that it has what appear to be either S-mine or smoke dischargers mounted on each fender, just behind the mud flaps. There also seems to be a third discharger mounted just forward of the rod antenna.

A company-sized detachment of Pz.Kpfw.IIIs (Ausf.J or L) relax on the steppes of the Soviet Union. Some, such as the second panzer from the left have appliqué spaced-armor arrays (although it only has the frame for the array on the mantle), while others do not.

This Pz.Kpfw.III (Ausf.J or L) stands ready for action, with its long L/60 main gun at the 12 o'clock position. Note the escape hatch on the side of the hull; there was one on each side, primarily for the use of the driver and the radio operator in emergencies. Later Ausf.Ls dispensed with this feature entirely. This panzer is also fitted with the spaced-armor panels.

A column of Pz.Kpfw.IIIs is led by a pair of Ausf.Js or Ls. At a distance, and without the benefit of viewing certain features, or knowing the chassis numbers, it is nearly impossible to accurately determine which of these two models are being viewed. There were Ausf.Js built with the short 5cm KwK38 L/42, which were then retrofitted with the L/60 version of the gun; some were originally built with the L/60 gun. Furthermore, early Ausf.Ls had the hull side escape hatch; later production models did not. This could blur the distinction between the two models. If they could be viewed, the engine deck vent cowls could easily differentiate an Ausf.J from an Ausf.L. On the Ausf.J they ran side-to-side, while on the Ausf.L they ran fore-to-aft.



A pair of Pz.Kpfw.IIIs (probably Ausf.Js) flank a Pz.Kpfw.IV Ausf.G or H, as seen through the view port of an accompanying AFV. All of these panzers have turret and hull "Schürzen" armor skirts, which were designed to protect their thinner sides from Soviet anti-tank rifle fire. Note the tactical number, "560" on the turret Schürzen of the Pz.Kpfw.III at left, and what may be a periscope projecting from the roof of the Pz.Kpfw.III at right. If this is so, the panzer is probably a Beobachtungspanzerwagen (armored artillery observation vehicle).

What is probably a Pz.Kpfw.III Ausf.L awaits developments under a sinister sky. The frame for the spaced armor is fitted to the mantle (but not the armor) on this L/60-armed panzer. To the right of the driver's visor, on the spaced armor, there appears to be a divisional insignia, possibly a "grenadier's head within a circle" of the 26.Panzer-Division.

This Pz.Kpfw.III is identified as an Ausf.M due to the presence of a Bosch black-out driving headlamp on the front fender (another was mounted on the opposite fender), and the cover plate over the engine air intake grills on the rear fender. These panzers also featured an exhaust system that was so configured as to prevent water from entering through it, since they were designed for deep wading. This panzer has an anti-aircraft gun mount on the commander's cupola.

With only 35 built, the Pz.Kpfw.IV Ausf.A was a relatively rare panzer. This one is marked with the white-outline balkenkreuz on the superstructure side and also has an underlined tactical number (unfortunately obstructed by the open hatch) on the turret's side. It is distinguished as an Ausf.A by the shape of the commander's cupola as well as the triangular frame-like device on the side of the superstructure, behind the national insignia. This was a mount for an anti-aircraft machine gun, which could be swung away from the panzer in order to be trained on an aerial target. Other early panzers, such as the Pz.Kpfw.II also had a mount of this type.

A lone Pz.Kpfw.IV Ausf.C sits on a platform wagon at a rail-head. The panzer is identifiable as an Ausf.C by the arrangement of the view ports on the superstructure front. Note also that the cupola differs from that of the Ausf.A seen in the previous photograph. There are no markings visible, while the crew members wear the black M1934 panzer uniform, along with the characteristic large black beret. Typically, the Germans did not chain tracked vehicles to rail wagons, preferring instead to use wooden blocks and chocks to prevent fore-to-aft and side-to-side movement.

A column of Pz.Kpfw.IVs (Ausf.B, C or D) park on a wide western European boulevard, during the 1940 campaign. The cupola configuration identifies these panzers as being later than the Ausf.A. There is an "X" marking on the rear plate of the panzer in the center of the photo, indicating the 8.Panzer-Division, which fought in the campaign as part of KLI.Panzer-Korps under Panzer-Gruppe von Kliest. It is possible that there is a second "X" beneath the tow cable; if so this is a panzer from the 9.Panzer-Division of Heeresgruppe B in the Netherlands. All visible crewmen wear the black M1934 panzer uniform with berets, while the commander of the panzer in the center wears a "Sam Brown" belt.

This Pz.kpfw.IV Ausf.C passes a pair of pioniere troops (combat engineers) busily engaged in digging. The panzer is identified as an Ausf.C by the configuration of the view ports on the superstructure front. There is length of spare track fitted to the bow and an improvised jerry can rack on the fender. The turret has been retro-fitted with a storage bin, a very common occurrence.

A Pz.Kpfw.IV (Ausf.C or D) winds its way along a narrow European street. Apparently some form of welcome by local Nazis has been prepared, as the banners and flags hanging from the building at the right indicate. The panzer wears a white-outline balkenkreuz as well as yellow tactical numbers ("633") on the superstructure rear plate.

With its 7.5cm KwK37 L/24 trained towards its rear, a Pz.Kpfw.IV (Ausf.C, D or E) takes part in street fighting during the campaign in the west in 1940. Other than a white-outline balkenkreuz national insignia on the side of the superstructure, there are no other readily visible markings. Note that many of the windows on the buildings in the background have been taped-over to mitigate flying glass caused by near-by explosions.

A neatly-stowed Pz.Kpfw.IV Ausf.D (note the bolt pattern over the turret side visor) passes over the crest of a hill, during a training exercise. It is very plainly-marked with a white-outlined balkenkreuz and is not fitted with a Notek system head- or tail-lamp. Interestingly, the poles to swab the 7.5cm gun's bore are un-painted, adding a bit of contrast to an otherwise plain panzer. The device directly under the 7.5cm gun tube was designed to push the panzer's radio antenna out of the way if the turret was traversed while the antenna was in an upright position.

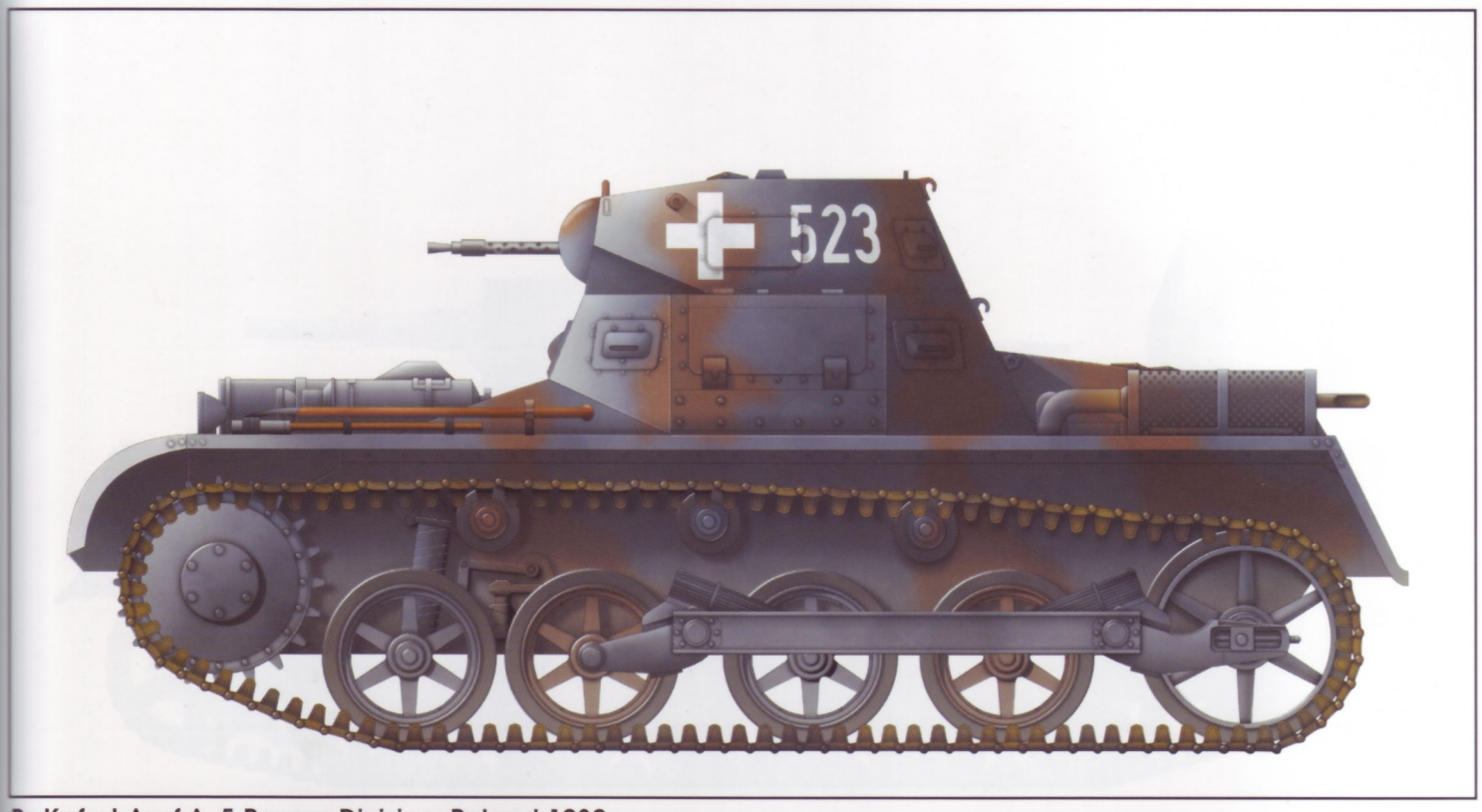
This fine study of a Pz.Kpfw.IV Ausf.D shows a full crew at rest who are obviously very happy about something. The commander is wearing his M1935 greatcoat over his uniform, while the remainder of the crew wears the black M1934 panzer uniform. Note the type of cupola, the external gun mantle and the lack of the Notek black-out driving head-lamp. There is a white panzer rhomboid marking with a number "5" on the superstructure front plate, while there is a white-outline balkenkreuz on the side plate. The tracks are the earlier, narrow 38cm type with smooth faces on the individual links.

This Pz.Kpfw.IV Ausf.D passes beneath an improvised Triumphal Arch, a privilege granted to victorious warriors since Roman times. This panzer is identified as an Ausf.D by the machine gun mount and the stepped front plate of the superstructure. It is liberally fitted with spare tracks and also has a Notek black-out driving head-lamp fitted to the driver's side fender. There is a rack filled with jerry cans on the turret roof, indicating the panzer is in for a long road march; this configuration is seldom, if ever, seen in a combat situation. The crewmen no longer wear the black padded beret, while the man at left wears his ceremonial marksman's lanyard.

A Pz.Kpfw.IV Ausf.D leads a column of panzers through a town, probably after the French Campaign of 1940; note that the black beret is not worn, it being discarded shortly after the end of the battles in the west. There are no markings visible on this dusty panzer, while the only unique fitting is a frame to store a spare road wheel mounted on the near fender. This view also affords a better look at the radio antenna deflector strapped on to the gun tube.

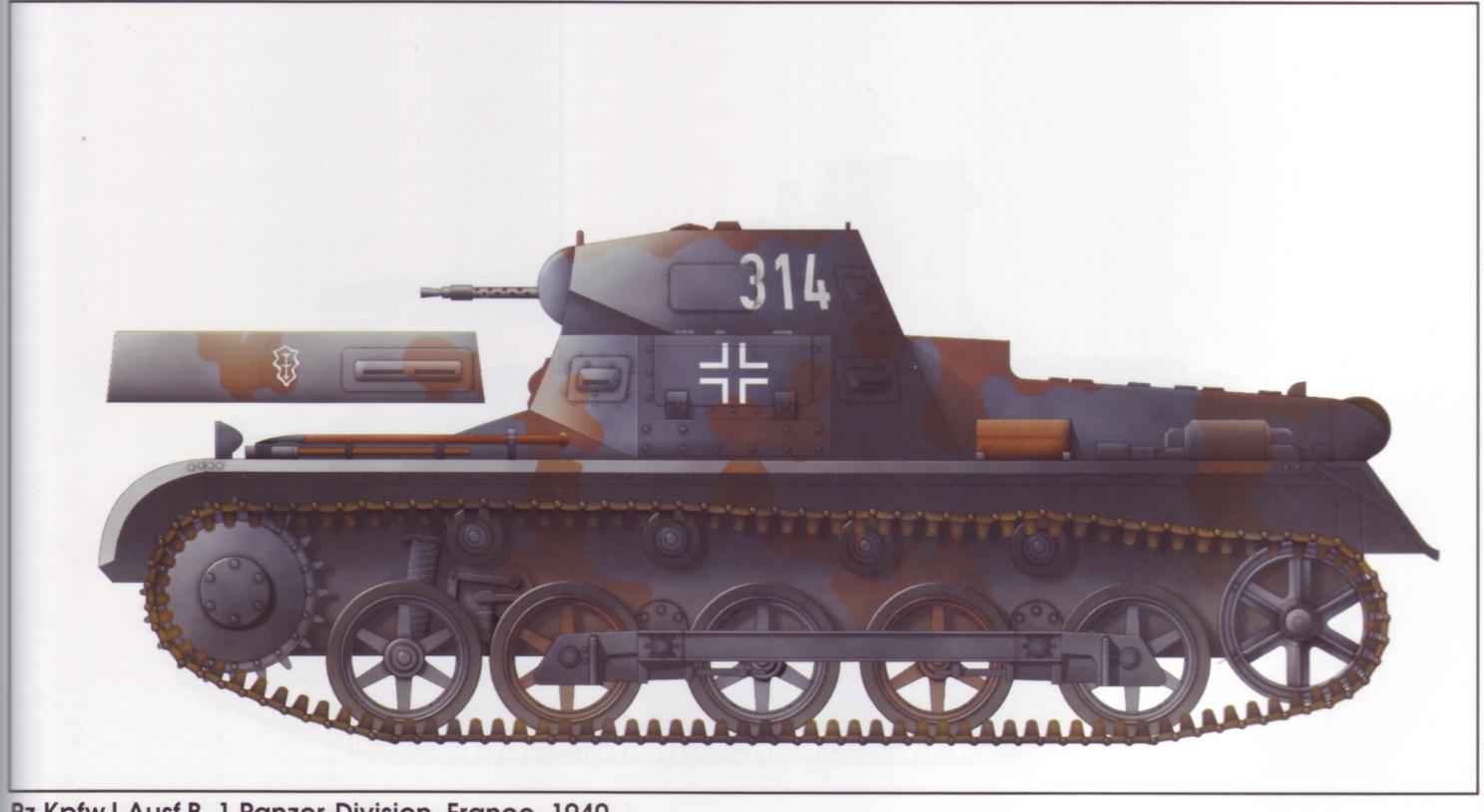
This destroyed Pz.Kpfw.IV Ausf.D is probably too far gone to be recovered and reconditioned, although it could certainly be cannibalized for spares. Note the hole in the armor on the lower front of the hull (which indicates that a fairly mangled transmission and final drive unit lies behind) and the lack of most of the suspension components on the near side. This panzer has a Notek headlamp in a very unique position towards the middle of the glacis plate.

This Pz.Kpfw.IV Ausf.D is one of 48 converted to operate on the bottom of the English Channel for the aborted invasion of the United Kingdom, "Operation Seelöwe" (Sealion). Among features typical for these "Tauchpanzers" (submersible tanks), the photograph shows the framing around the front armor of the turret and the hull MG34 opening. Rubberized canvas was mounted in these places to seal the panzer for submerged operation. Markings include a black balkenkreuz with a white outline on the superstructure, that also runs over the radio antenna's storage trough. A small white "222" tactical number adorns the turret side. The front of the panzer is festooned with spare track and there are spare road-wheels, one mounted on each fender. The vehicles on the extreme right of the photo, as well as the type of panzer we are viewing, identify this photo as being from the early stages of "Operation Barbarossa", in the summer of 1941.



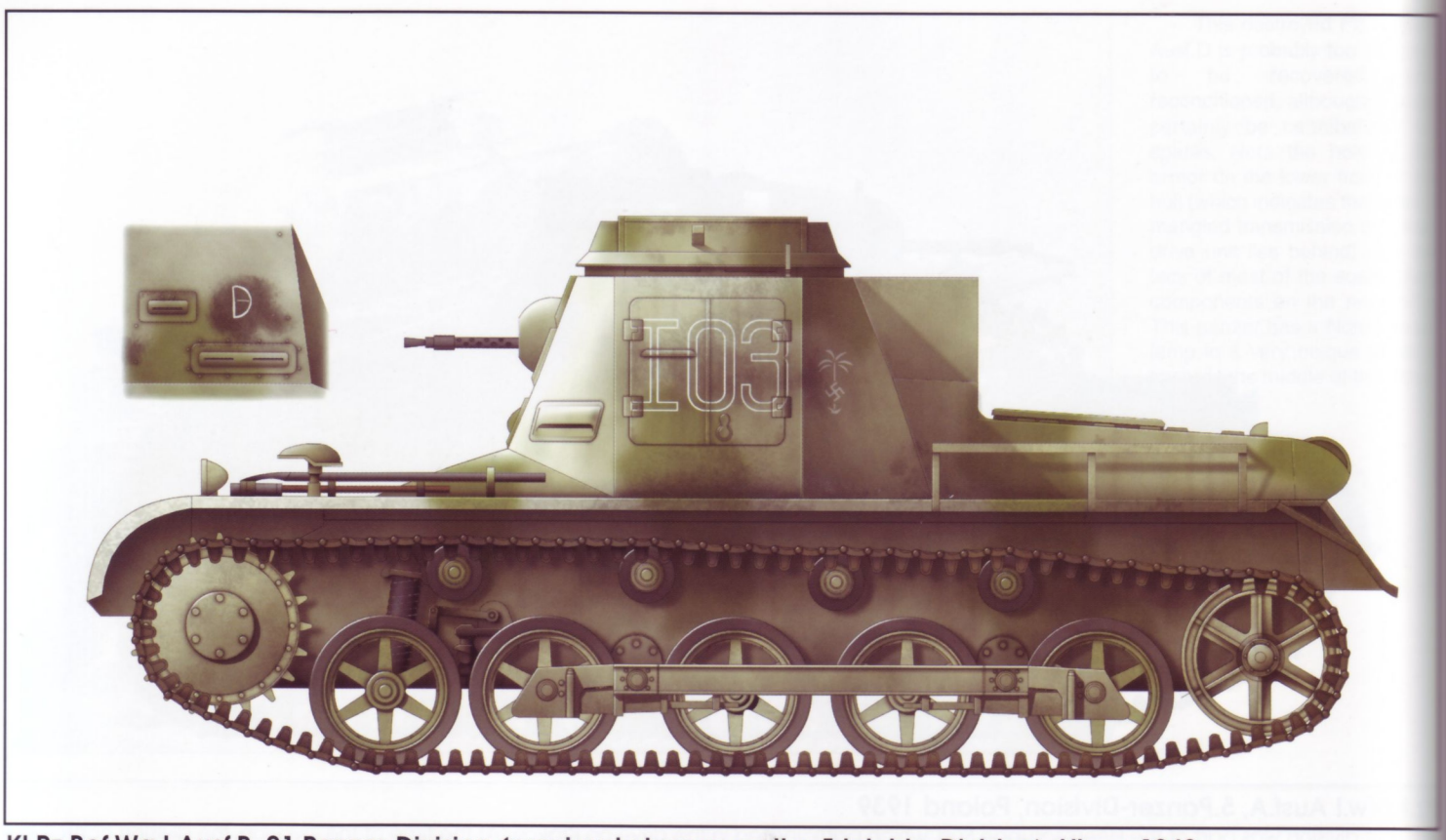
Pz.Kpfw.I Ausf.A, 5.Panzer-Division, Poland 1939

This division was part of the Heeresgruppe Süd, which participated in the drive on Krakow. At the time of the invasion, the division contained Panzer-Regiments 15 and 31, part of the 8.Panzer-Brigade. Each regiment contained two battalions of three companies each, with a combined total of 152 Pz.Kpfw.Is. This panzer is from the 2.Zug. (platoon) of 5.Kompanie, which if organized "by the book" according to K.St.N.1171, should have contained three Pz.Kpfw.IIs and two Pz.Kpfw.Is. The white balkenkreuz (which could also be seen on the turret or superstructure front) and Tac numbers on the turret were easily distinguished by friend and foe alike, leading to efforts by some crews to tone them down. Colors: dunkelgrau Nr.46 (2/3 coverage) with dunkelbraun Nr.45 blotch pattern (1/3 coverage).



Pz.Kpfw.I Ausf.B, 1.Panzer-Division, France, 1940

This division fielded Panzer-Regiments 1 and 2 (of 1.Panzer-Brigade) during this campaign, as part of XIX.Panzer-Korps under von Kleist, in the southern drive towards the channel coast. The balkenkreuz national insignia has been modified to be less conspicuous by filling its center with the vehicle color, producing an "outline" cross. The turret still wore solid white Tac numbers (4th panzer of the 1st platoon of the 3rd company), while there was a divisional insignia (the un-official oak leaf) applied in white to the superstructure front plate. Colors: dunkelgrau Nr.46 (2/3 coverage) with dunkelbraun Nr.45 blotch pattern (1/3 coverage).

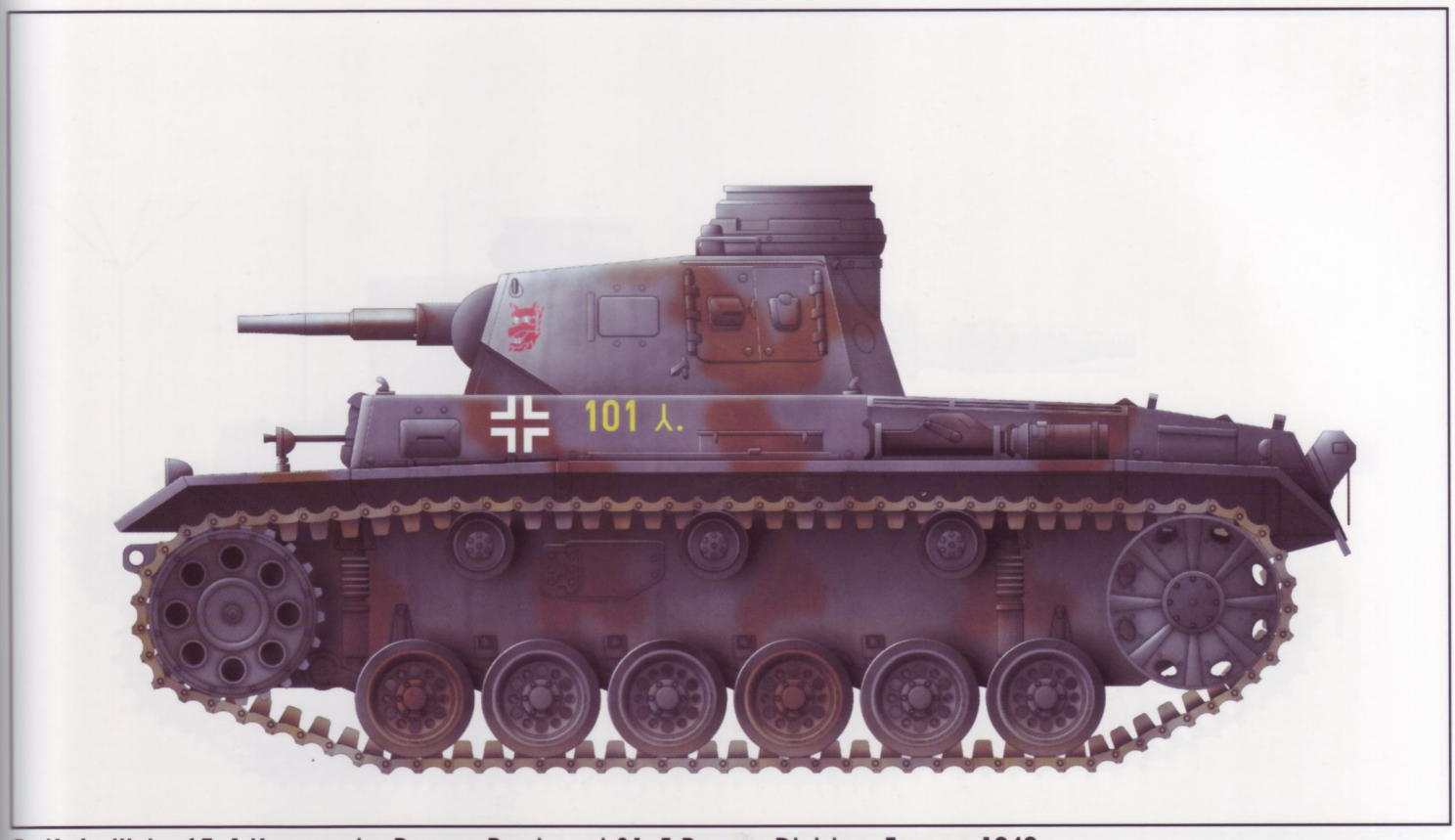


Kl.Pz.Bef.Wg.I Ausf.B, 21.Panzer-Division (previously known as the 5.leichte-Division), Libya, 1942

This is a command panzer from the I.Abteilung, Panzer-Regiment 5, as indicated by the large Roman "I". The white "D" with a line across the middle was the insignia of the division. Photos indicate this panzer was fitted with appliqué armor panels on the front of the superstructure as well as the upper and lower glacis plate, while the rack on the left-side fenders carried jerry cans. Colors: gelbbraun RAL 8000 (2/3 coverage) with graugrün RAL 7008 blotch pattern (1/3 coverage) over the original dunkelgrau RAL 7021.

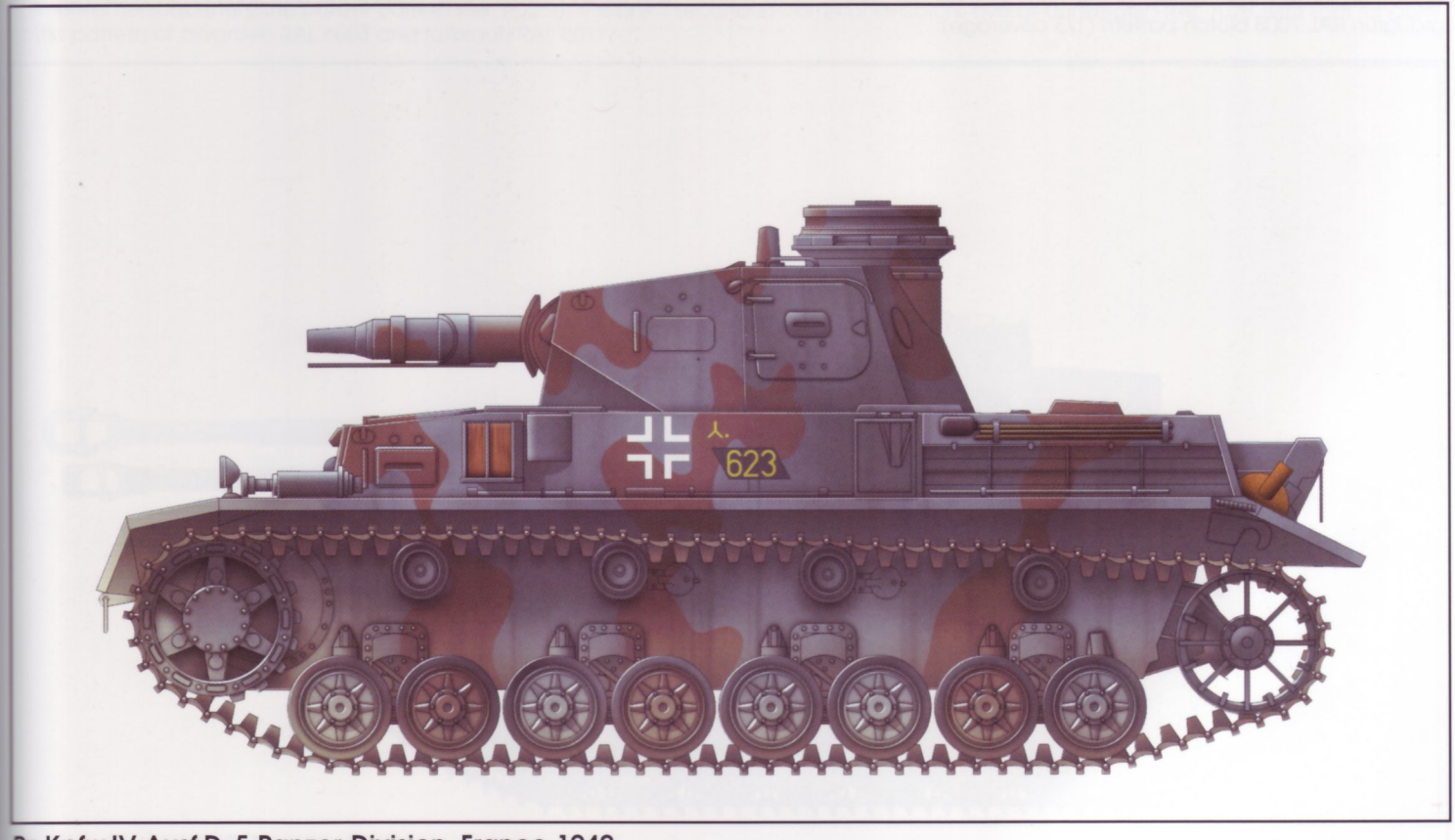
Pz.Kpfw.II. Ausf.A, B or C, unidentified unit, Poland 1939

Photographed in Warsaw, this panzer was probably part of either 1. or 4.Panzer-Divisions, which took part in that battle. The "R03" on the turret identifies this panzer as being from a regimental headquarters company. Photos indicate that within a few days of being committed to battle, the crew of this panzer obscured their rather distinctive white turret markings by covering them with mud. Colors: dunkelgrau Nr.46 (2/3 coverage) with dunkelbraun Nr.45 blotch pattern (1/3 coverage).



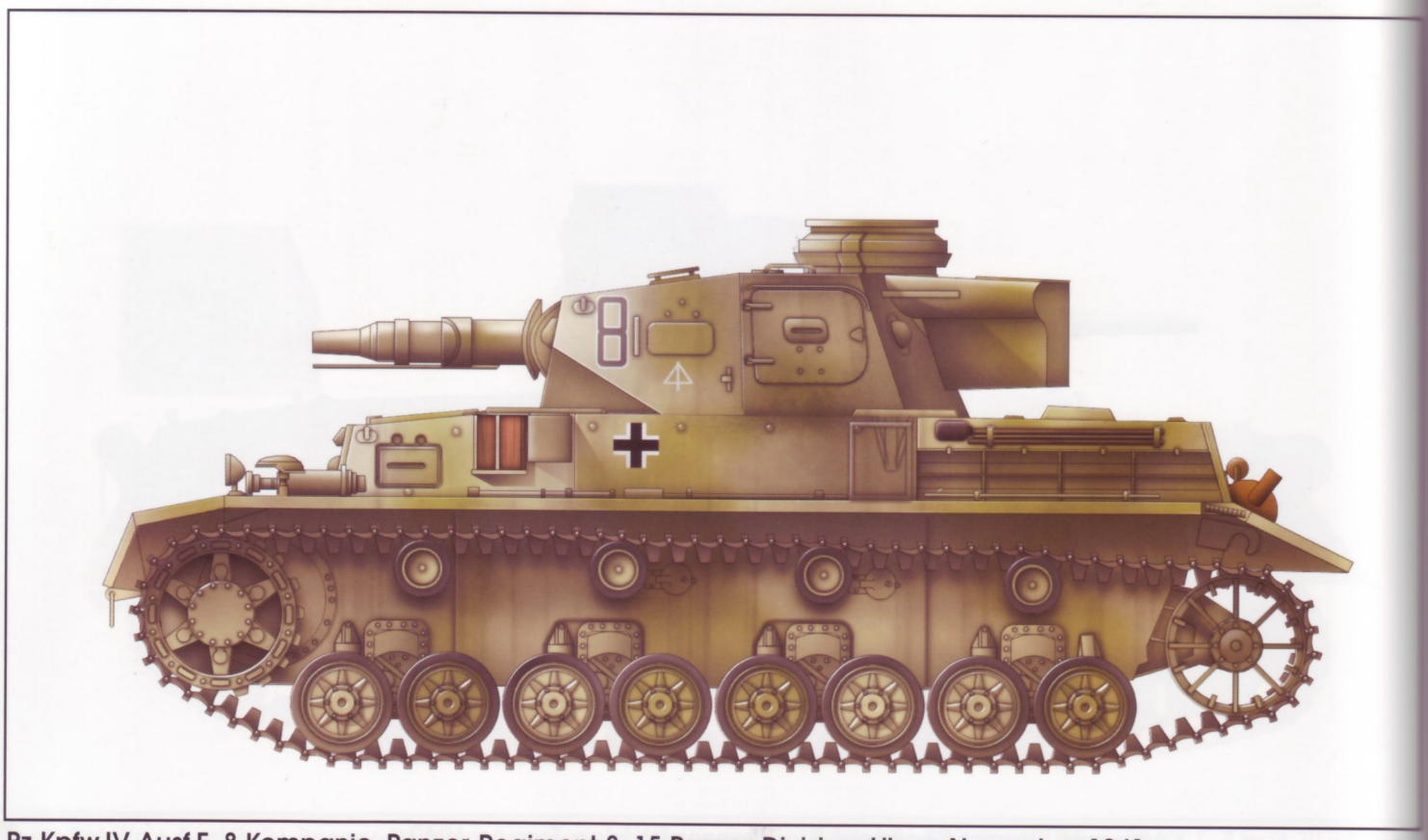
Pz.Kpfw.III Ausf.E, 1.Kompanie, Panzer-Regiment 31, 5.Panzer-Division, France 1940

The "Devil's Head" insignia of this unit was often seen later in the war on Pz.Kpfw.IVs and Panthers, photographic evidence has also emerged showing this device on Pz.Kpfw.IIIs as seen here. The division took a total of 52 Pz.Kpfw.IIIs with them as they raced towards Arras. Colors: dunkelgrau Nr.46 (2/3 coverage) with dunkelbraun Nr.45 blotch pattern (1/3 coverage)



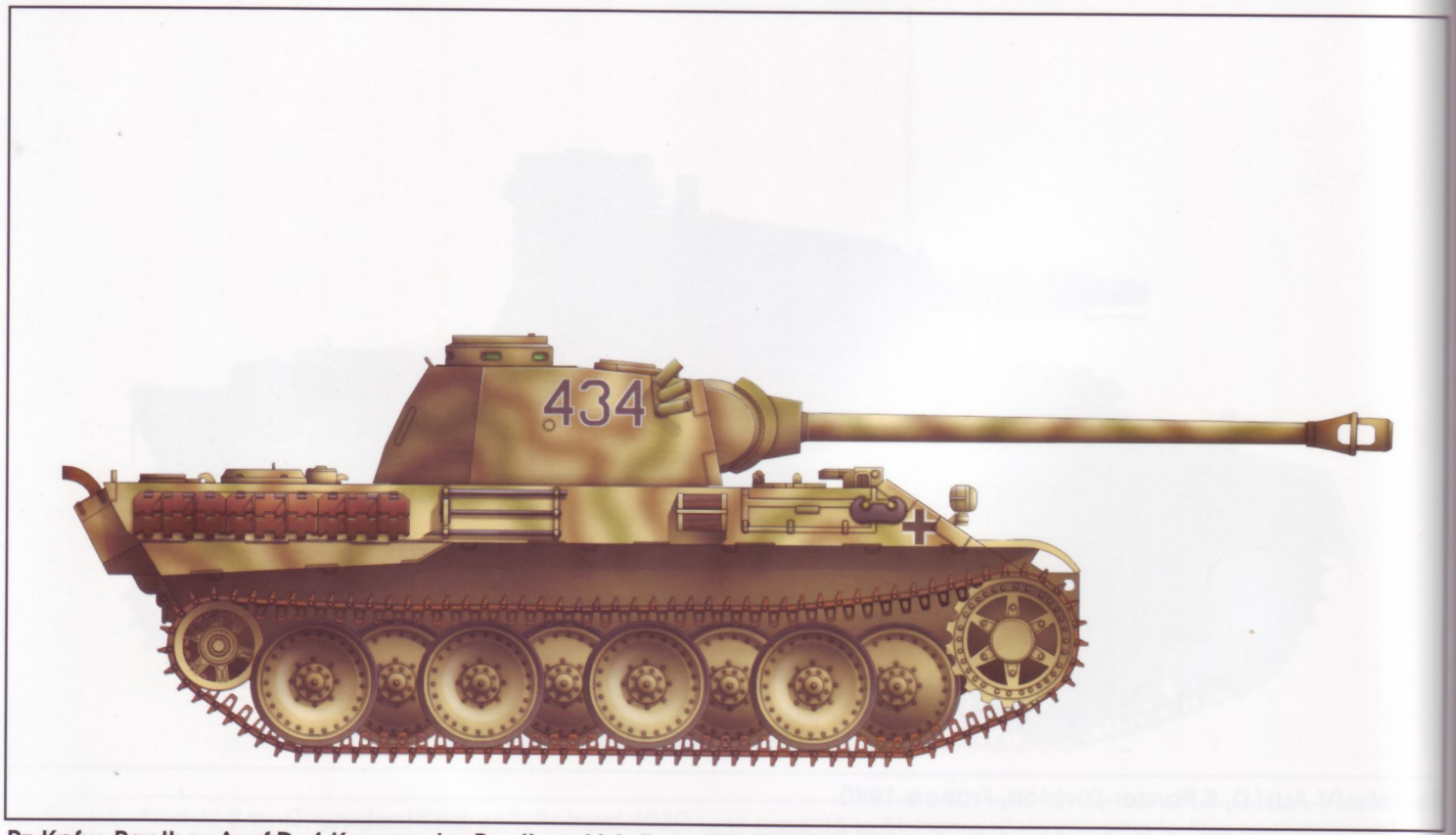
Pz.Kpfw.IV Ausf.D, 5.Panzer-Division, France 1940

This panzer was part of either Panzer-Regiment 15 or 31, each of which contained 12 of these panzers. Note the "open" nature of the balkenkreuz and the yellow Tac numbers on a black panzer rhomboid, painted directly on the superstructure side. If the 6.Kompanie was organized per the "Gliederung" for a "mittlere Panzerkompanie" (medium tank company) issued on February 21, 1940, it would have contained a total of eight Pz.Kpfw.IVs, six Pz.Kpfw.IIs and a single kl.Pz.Bef.Wg. The company contained a company HQ platoon, a single light platoon and two medium platoons. Colors: dunkelgrau Nr.46 (2/3 coverage) with dunkelbraun Nr.45 blotch pattern (1/3 coverage).



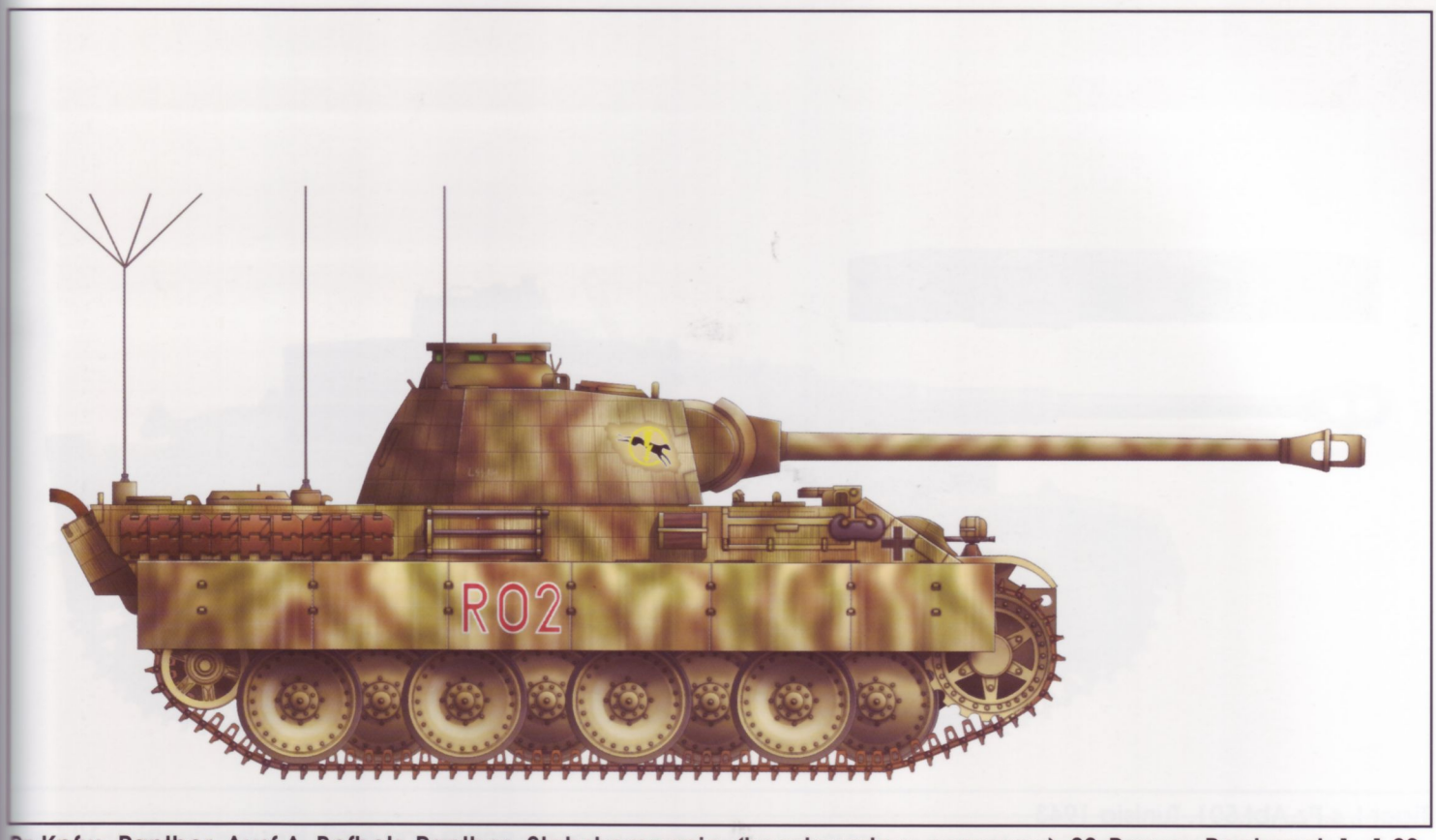
Pz.Kpfw.IV Ausf.E, 8.Kompanie, Panzer-Regiment 8, 15.Panzer-Division, Libya, November 1941

This panzer participated in the attack on the 5th South African Brigade on 28 November, during "Operation Crusader" which resulted in that Commonwealth unit's rout, but not the capture of Tobruk, which was Rommel's ultimate goal. Panzer-Regiment 8 contained two panzer battalions, each of three companies. Among their initial assets were 20 Pz.Kpfw.IVs. The "8" on the side of the turret indicated the 8.Kompanie; on some panzers the centers of the number's two segments were filled-in with white paint. Colors: gelbbraun RAL 8000 (2/3 coverage) with graugrün RAL 7008 blotch pattern (1/3 coverage).



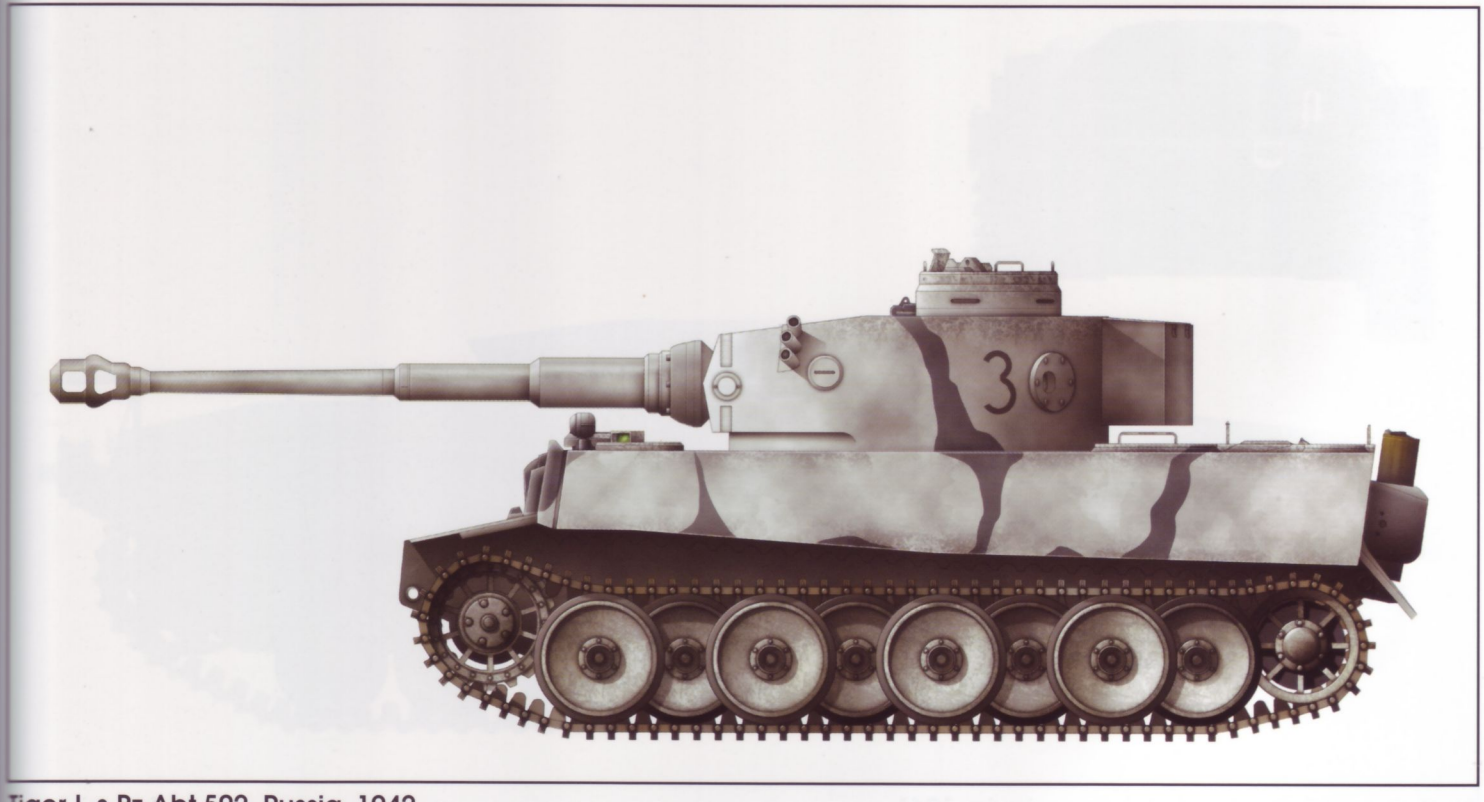
Pz.Kpfw. Panther Ausf.D, 4.Kompanie, Panther-Abteilung 52, Panther-Regiment von Lauchert, Kursk, Russia, 1943

This Panther Ausf.D was one of 96 panzers issued to this battalion as part of the build-up prior to Operation "Zitadelle". The entire regiment was attached to the "Großdeutschland" division on July 5, 1943. Out of a total of 184 Panthers committed to this operation, by July 17, only 44 remained operational. Colors: overall dunkelgelb RAL 7028, with light random mottle pattern of olivgrün RAL 6003 and rotbraun RAL 8017.



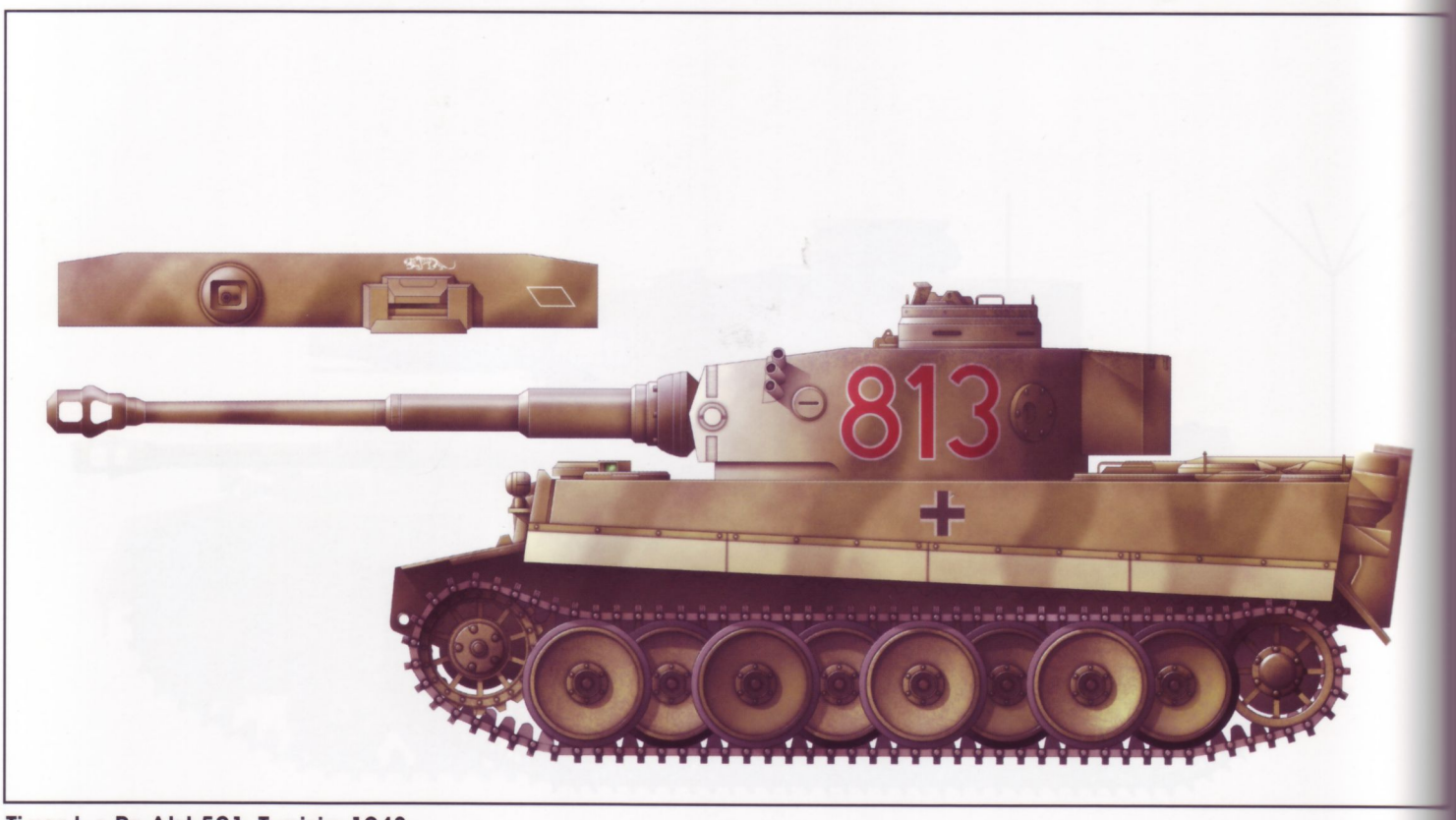
Pz.Kpfw. Panther Ausf.A Befhels-Panther, Stabskompanie (headquarters company) SS-Panzer Regiment 1, 1.SS-Panzer Division "LAH", Normandy, France, summer 1944

This well-photographed Panther featured a very colorful "Leaping Panther" insignia on the turret sides, placed in an area where the factory-applied Zimmerit had been removed; the characters "LSSAH" were also inscribed in the Zimmerit along the lower turret sides. As part of the regimental headquarters, the panzer carried the "R02" of the unit's second-in-command. Colors: overall dunkelgelb RAL 7028, with light random mottle pattern of olivgruen RAL 6003 and rotbraun RAL 8017.



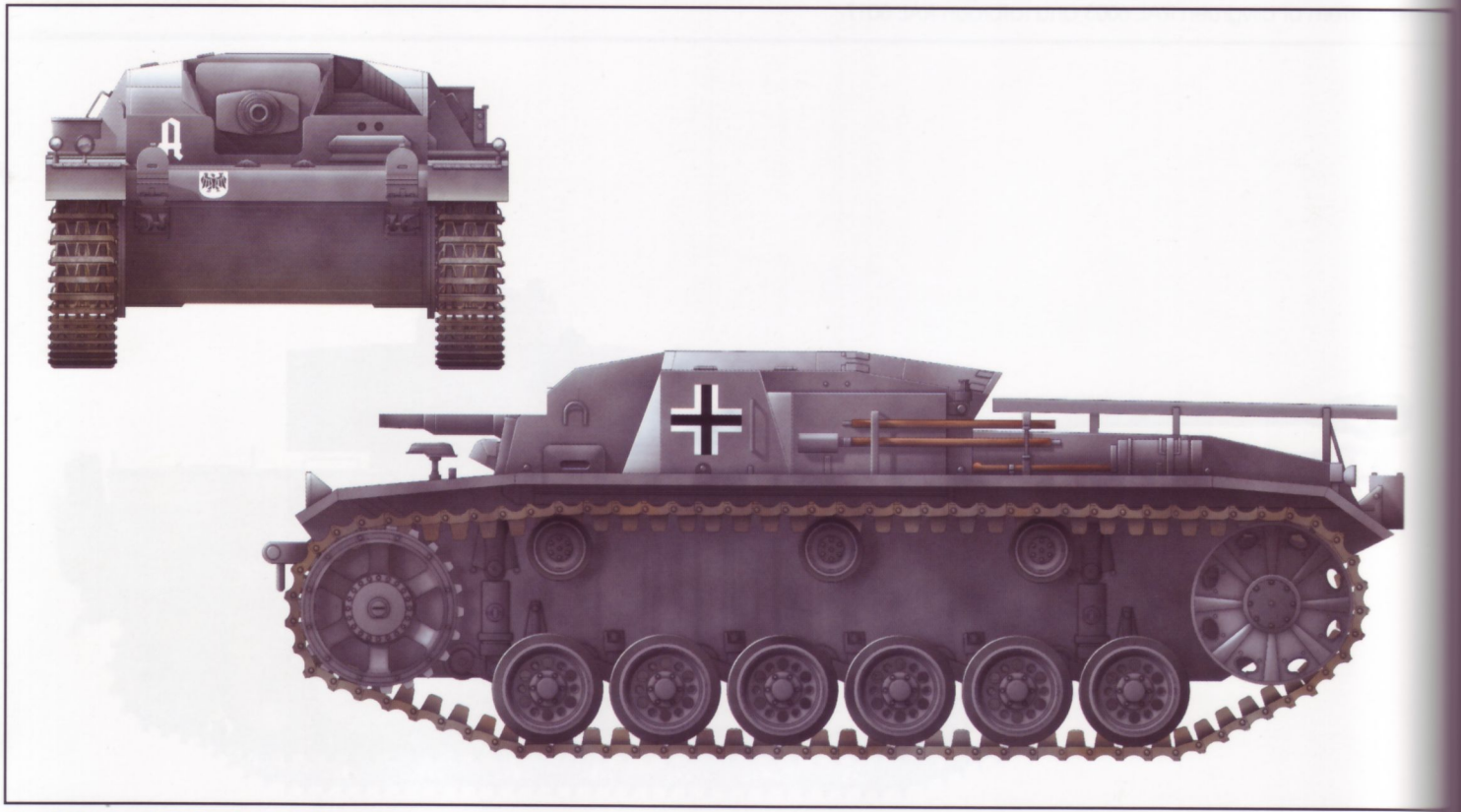
Tiger I, s.Pz.Abt.502, Russia, 1942

This unit's 1.Kompanie fielded four initial-production Tiger Is on the Leningrad Front, in the northern Soviet Union, beginning late in August of 1942. These early Tiger Is originally carried a three-digit Tac number on their turrets, in white outline form. In February 1943, they were given a coat of winter white-wash that left small stripes of the original base color showing. Also at that time, single-digit Tac numbers (1 through 5, for the five remaining Tigers) were applied to the turret in solid black paint. Colors: overall dunkelgrau RAL 7021 with large areas over-painted in white.



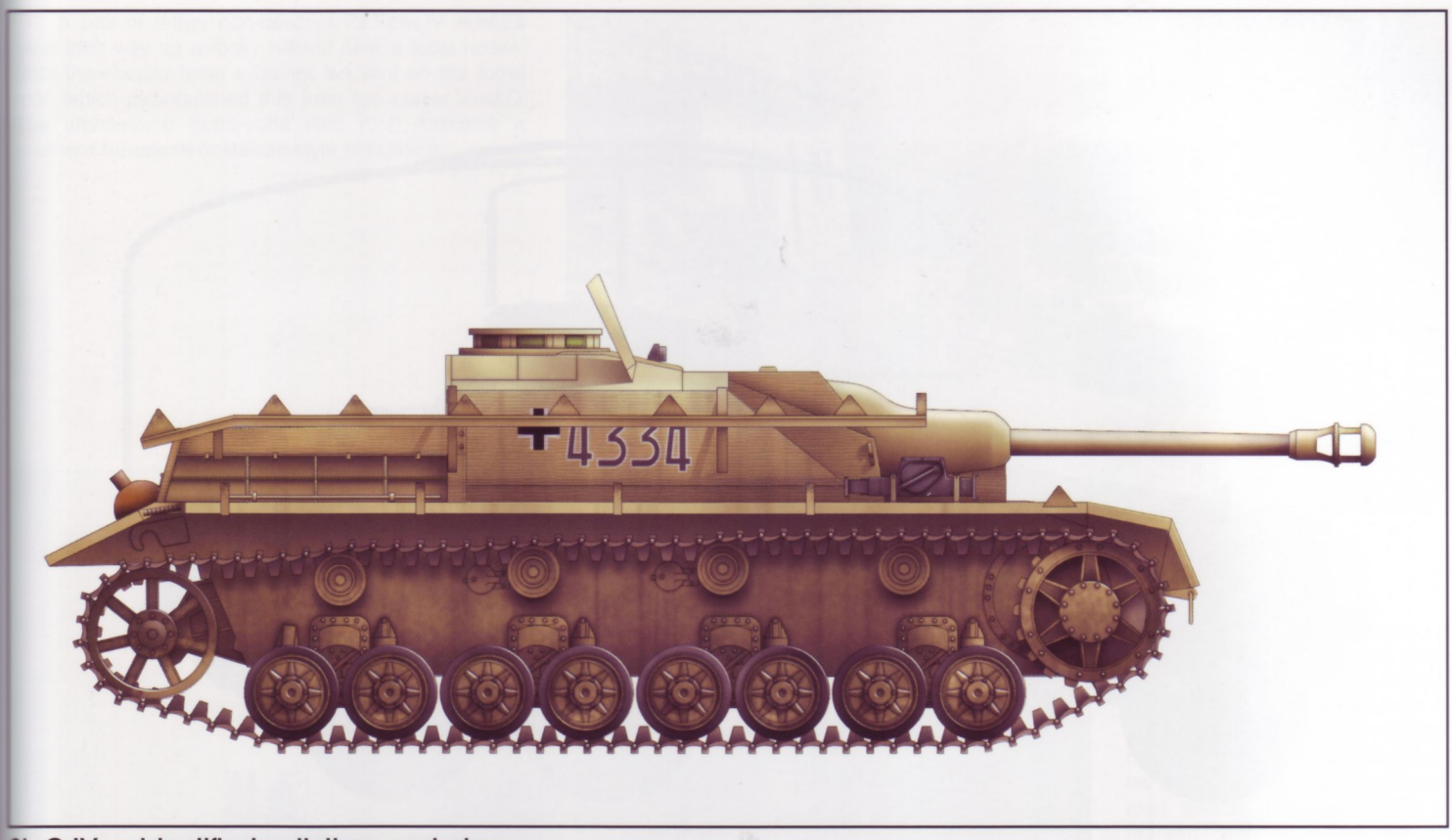
Tiger I, s.Pz.Abt.501, Tunisia 1943

This unit arrived in Africa beginning in November of 1942 and eventually fielded 20 Tiger Is and 25 Pz.Kpfw.III Ausf.M. It was attached to the 10.Panzer-Division and used during "Operation Ochsenkopf" which began on February 28, 1943. As the unit suffered attrition it was consolidated into the 8.Kompanie of Panzer-Regiment 7, thus the Tac number of "813" (which was also carried on the stowage locker on the turret's rear). The unit's "Stalking Tiger" insignia was seen on the front plate of the superstructure along with a panzer rhomboid. Colors: braun RAL 8020 (2/3 coverage) with grau RAL 7027 blotch pattern (1/3 coverage).



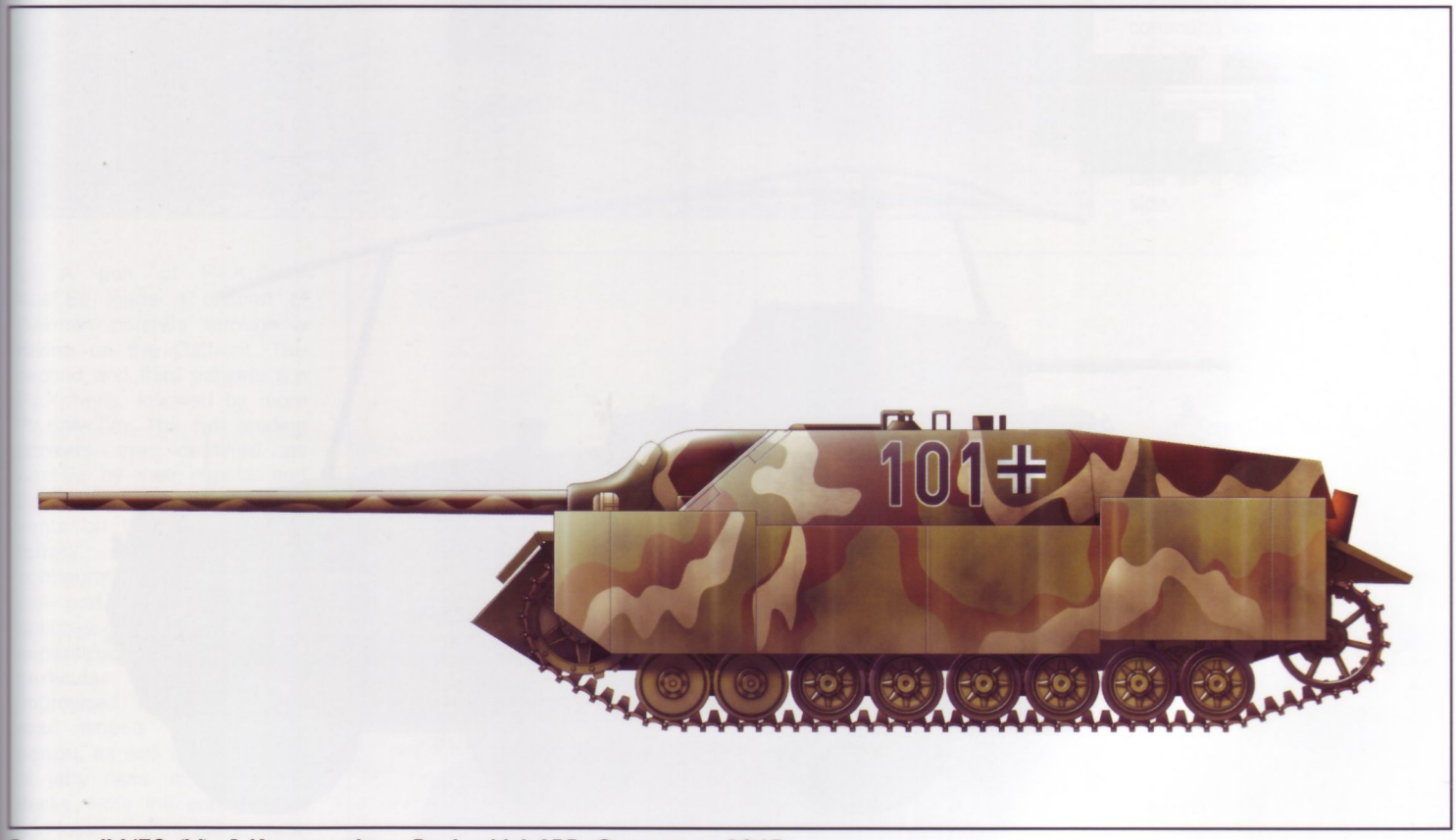
StuG.III Ausf.B, StuG.Abt.197, Yugoslavia, 1941

While this unit eventually morphed into the famed s.Pz.Jg.Abt.653 (which later fielded the Ferdinand/Elefant and then the Jagdtiger), it started life as a Sturmgeschütz battalion that became active on November 25, 1940. By April 6 1941, at the start of the Balkans Campaign, it was organized with three batteries, each with six StuG.III Ausf.Bs. However, due to the rapidity of the campaign, the unit saw virtually no action. The white shield indicates this vehicle belongs to 1. Batterie, while the character "A" is its place in the battery. Color: overall dunkelgrau RAL 7021.



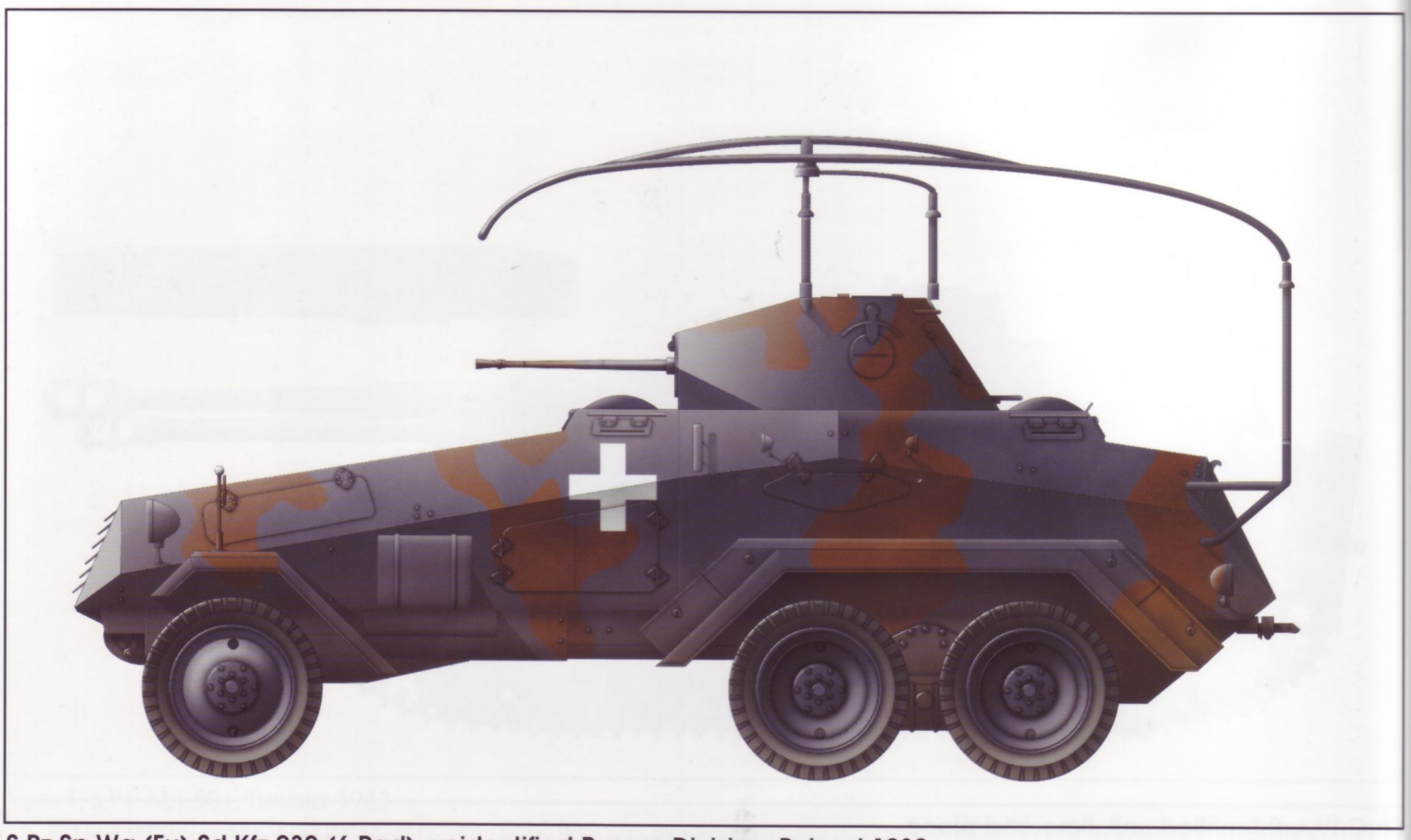
StuG.IV, unidentified unit, time and place

Sturmgeschütz IVs were often issued in company strength to infantry divisions in the last year of the war, usually in groups of ten vehicles. Other units, such as the 17.SS-Panzergrenadier Division were issued a battalion that at one point contained 42 of these assault guns in lieu of normal panzers. This assault gun carries a less-common four-digit Tac number, which may indicate such a company-level assignment. Color: overall dunkelgelb RAL 7028.



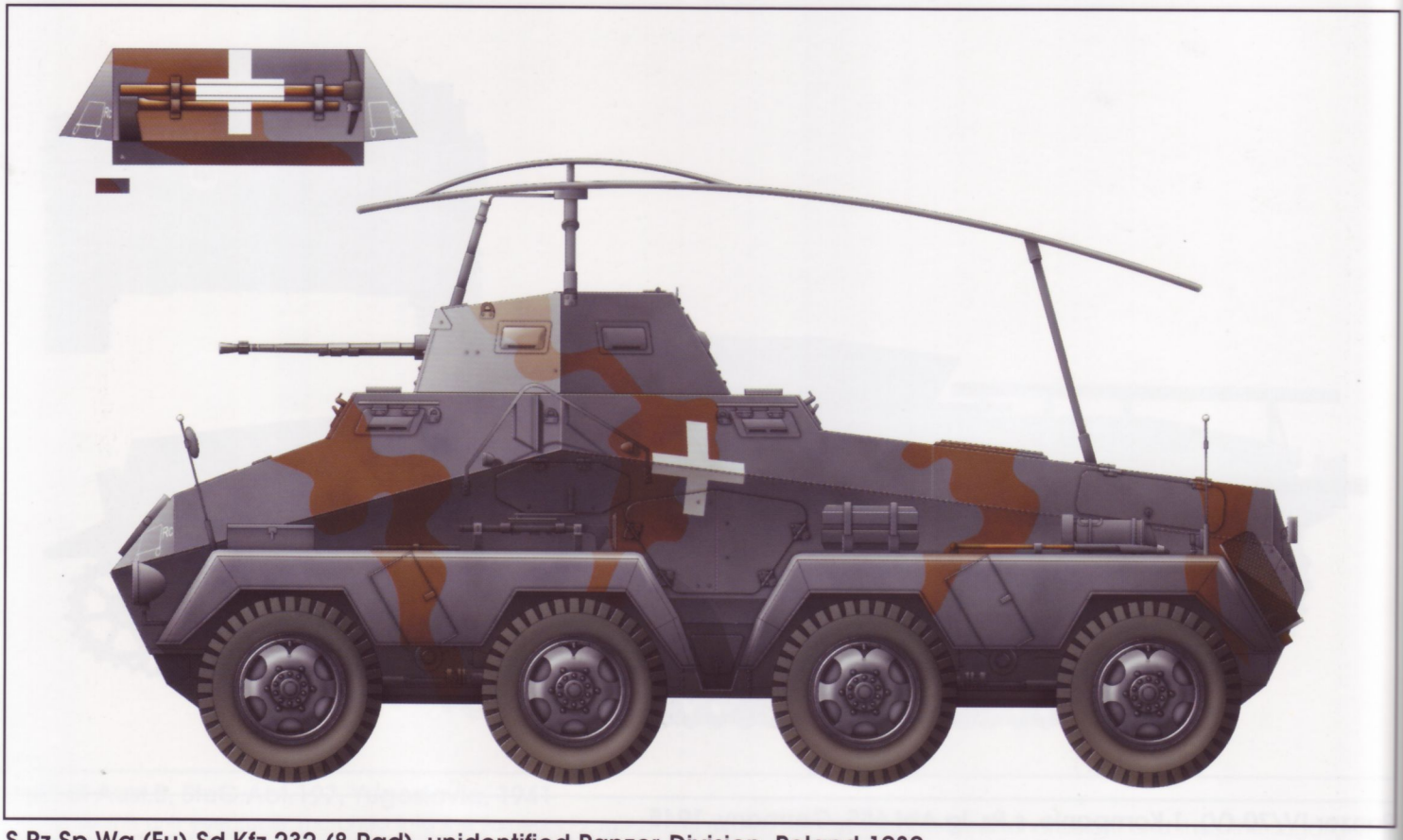
Panzer IV/70 (V), 1.Kompanie, s.Pz.Jg.Abt.655, Germany, 1945

This tank destroyer survived the final battles in northern Germany to surrender to Canadian troops at the end on May 5, 1945. By then, it had lost its Seitenschürzen. At one point in time, the unit consisted of a headquarters company of three Panzer IV/70 (V), while the 1. and 3.Kompanie contained 14 Panzer IV/70 (V) each, and the 2.Kompanie fielded 14 Jagdpanthers. Colors: overall olivgruen RAL 6003 with hard-edge pattern of broad stripes and blotches of dunkelgelb RAL 7028 and rotbraun RAL 8017.



S.Pz.Sp.Wg.(Fu) Sd.Kfz.232 (6 Rad), unidentified Panzer-Division, Poland 1939

As part of the Panzer-Division's Panzer-Aufklärung-Abteilung, the Panzerspähkompanie contained three of these Sd.Kfz.232 armored radio cars in the 1.schwerer Zug. (heavy platoon) as well as three Sd.Kfz.231s without radios. This non-descript car carries only the solid white balkenkreuz national insignia. Colors: dunkelgrau Nr.46 (2/3 coverage) with dunkelbraun Nr.45 blotch pattern (1/3 coverage).



S.Pz.Sp.Wg.(Fu) Sd.Kfz.232 (8 Rad), unidentified Panzer-Division, Poland 1939

While the unit is not known, this armored radio car exhibits interesting markings including an unusual Tac sign, which indicates that it is assigned to a motorized infantry unit. Furthermore, the solid white balkenkreuz national insignia has been applied to the glacis plate, to include the pioneer tools stowed in that location. Colors: dunkelgrau Nr.46 (2/3 coverage) with dunkelbraun Nr.45 blotch pattern (1/3 coverage).

A pair of rather non-descript Pz.Kpfw.IV Ausf.Es wind their way up a rocky hillside near a local house. Note the circular fume extractor fan vent on the turret roof, which distinguished this from the earlier Ausf.D. The architecture (terra-cotta tiled roof) indicates a southern European or Balkan style of building.

A column of panzers, led by at least two Pz.Kpfw.IV Ausf.Es (note the new cupola and the external mantle), stops for maintenance on a road march. Note the crewman next to the lead panzer using a pry bar to clear an obstruction from the road wheels. The lead panzer is marked with a white "G" as belonging to Panzergruppe 2, led by Guderian, while the clothes worn by the man with the pry bar indicate that this photograph may have been made during the first winter of "Operation Barbarossa". Guderian's command included the 3., 4., 10., 17. and 18.Panzer-Divisions. The panzer also has a small white "8" on the superstructure side (just forward of the white-outline balkenkreuz national insignia), as well as a larger "8" on the turret side.

A pair of Pz.Kpfw.IV Ausf.Es leads a column of German panzers through a ravine on the Ostfront. The second and third panzers are Pz.Kpfw.IIs, followed by more Pz.Kpfw.IVs. The two leading panzers are identified as Ausf.Es by their cupola, and circular fume extractor fan vents on the roofs of their turrets, as well as the configuration of the driver's view port. They both also have appliqué armor panels on their superstructure fronts. Of particular interest is the improvised stowage of three road wheels on the near panzer, as well as the storage of jerry cans on the engine decks. Note the configuration and location of the balkenkreuz and the white outline of the turret tactical number ("4??"), which is unfortunately incomplete due to the position of the turret side door.

The driver of this Pz.Kpfw.IV Ausf.D or E demonstrates the "head out" position as he controls his panzer. Note the Notek head-lamp on the fender as well as the empty tray for the jack block, just below and behind the driver. Attached to the gun tube is the antenna deflector rail. The panzer has a rather complete whitewash neatly applied right up to the border of its balkenkreuz; the white edge of the cross is distinctly different from the whitewash. There is a small box next to the driver's visor, which was left in the original dunkelgrau color. Upon it appears to be the single "X", which was the post-1941 insignia of the 5.Panzer-Division, while the edge of a similar area is just visible on the forward side of the turret. The "devil's head" insignia of Panzer-Regiment 31 was commonly seen in this position.

This Pz.Kpfw.IV appears to be an up-gunned Ausf.F (sometimes designated Ausf.F2); note the configuration of the muzzle brake and the Notek head-lamp on the fender. This panzer carries the characteristic "Stahlhelm" (Steel Helmet) insignia of the German Army's elite "Großdeutschland" Division, on the near mud flap in white. A unique Tac number "=1" is painted in white on the rear of the turret's storage locker. Note also the improvised nature of the spare road-wheel storage, as well as the different styles of jerry can next to it, on the near fender.

This Pz.Kpfw.IV Ausf.G is identified as an early version by the split-hatch on the commander's cupola, the lack of 30mm appliqué plates on the superstructure front, the position of the radio antenna, and finally, two Bosch black-out driving head-lamps (one on each fender). Note also the drive sprockets, which were introduced on the Ausf.F and were carried over to the Ausf.G and a few very early Ausf.Hs. This panzer is well-supported by grenadiers, including a pair of MG34 gunners partly sheltering behind the turret Schürzen. There is a Tac number on the Schürzen in white-outline form ("222"), while the panzer is covered in a base of dunkelgelb RAL 7028 with an overspray of rotbraun RAL 8017 and olivgrün RAL 6003.

A late Pz.Kpfw.IV Ausf.G stands guard on the steppes of the Soviet Union while the crewmen observe a distant activity. This panzer is identified as a late Ausf.G by the single-piece hatch lid on the commander's cupola in combination with the position of the radio antenna and the application of a 30mm plate over the superstructure front plate's base of 50mm; note the cut-out area for the driver's twin periscope openings. The panzer has rails on its hull for "Schürzen" (skirts) as well as an array fitted to the turret. Note the white-outline tactical number of "621" on both the turret Schürzen's side and rear panels. The color scheme is dunkelgelb RAL 7028 base with an overspray of rotbraun RAL 8017 and olivgruen RAL 6003.

This later Pz.Kpfw.IV Ausf.G exhibits its identifying features quite well as it speeds past the camera. It has a single-piece lid on the commander's cupola, bolted-on 30mm plates on the superstructure front plate and a single Bosch head-lamp on the near fender. The Schürzen are mounted in a manner seen on early panzers and the drive sprocket (although distorted due to its motion) appears to be of the type seen on the Ausf.F, G and a few early H. There is a rain gutter on the turret front plate over the sight aperture for the gunner. The panzer is overall dunkelgelb RAL 7028, with a possible "80?" Tac number on the turret.

A group of German wheeled vehicles and motorcycles congregate along a road, with a Pz.Kpfw.IV Ausf.G, at left. The panzer is identified as an Ausf.G by the split hatch on the commander's cupola, the 30mm plate welded onto the superstructure front (note the cut-out to clear the driver's periscopes) and the barely seen drive sprockets. The panzer has a full array of hull and turret Schürzen and is painted in a base of dunkelgelb RAL 7028 with large patches of olivgrün and rotbraun over-sprayed. There is a white-outlined balkenkreuz on the hull Schürzen and a Tac number ("?12") in white stencil form on the turret Schürzen.

A pair of Pz.Kpfw.IV Ausf.Hs lead Tiger Is of SS-Division "Das Reich" along a forest track, on the Ostfront. The lead panzer is identified as an Ausf.H by the new drive sprocket which could not be fitted to an Ausf.G hull, unless the transmission and final drives were also changed. It has a single-piece lid on the commander's cupola as well as Zimmerit anti-magnetic mine paste, which was applied at the factory to panzers beginning in September of 1943. Note the cut-out portion of the small Schürzen plate just over the drive sprocket. The panzer is finished in the base of dunkelgelb RAL 7028 and has only a white-outlined, black balkenkreuz visible on the turret Schürzen. Other panzers in the column have the divisional insignia left-over from "Operation Zitadelle" (a horizontal bar with a pair of attached vertical bars, in white), which took place the previous July.

This familiar photo depicts a Pz.Kpfw.IV Ausf.J (note the chassis number, 89589 on the superstructure front plate). It belonged to the 8.Kompanie, II.Abteilung, Panzer-Regiment 3, of the 2.Panzer-Division, and was photographed in the west during training to meet the expected Allied invasion of France in 1944. The panzer is in pristine condition with a rather fresh paint-job, consisting of a base of dunkelgelb with an over-spray of olivlgün and rotbraun on top of factory-applied Zimmerit. All visible markings are stenciled in white. The spare track links are stowed in standard, factory-applied racks on the glacis and transmission access hatch; they are of an earlier type with hollow guide teeth and smooth faces on the links.

Another view of panzers from 8.Kompanie of Panzer-Regiment 3 during training in the west shows what, at first glance, might be another Pz.Kpfw.IV Ausf.J. However the use of the later cast idler wheel as seen here is not necessarily a sure means of identifying any model of the Pz.Kpfw.IV. The sure means of identifying this panzer as actually being an Ausf.H, is the retention of the small exhaust muffler for the turret traverse motor, next to the main muffler on the lower rear hull plate, as seen here. This device was eliminated, along with the motor (in favor of increased fuel capacity) on the Ausf.J.

Another familiar photograph depicts a Pz.Kpfw.IV Ausf.H on the Ostfront. Aside from its own spare track, this panzer is also covered in track taken from a Soviet T-34 as additional protection. Note how a bit of T-34 track has been cut away on the turret front so the gunner's sight has a clear field of view. The single-piece lid on the commander's cupola, location of the antenna mount on the rear corner of the hull and the stowage of the "C"-type tow hooks on the front fender, next to the Bosch head-lamp, identify this as an Ausf.H.

A panzer of the 6.Kompanie of Panzer-Regiment 6, belonging to the 3.Panzer-Division waits under camouflage, on the reverse slope of a ridge, for the next enemy onslaught. The 3.Panzer-Division fought on the Ostfront from the beginning of "Operation Barbarossa" until the bitter end. It is impossible to determine if this Pz.Kpfw.IV is an Ausf.H or an Ausf.J since the main features are covered by the camouflage, while the photograph is lacking in quality. But it is included here due to the interesting markings.

A column of panzers is followed by a Volkswagen Kübel and some infantry as it makes its way across the snow-bound Ostfront. The last Panzer in line appears to be a Pz.Kpfw.IV Ausf.J as it does not have an exhaust muffler for the deleted turret power-traverse motor. The panzers are white-washed for concealment against the snows of winter, while the last one has a dark tactical number on the turret Schürzen, next to the balkenkreuz. There is also an unfortunately unrecognizable unit insignia (a shield-shaped device) on the rear superstructure plate.

A Panther Ausf.D leads a funeral procession with the deceased's coffin mounted on a stripped-down Pz.Kpfw.I chassis. Note the cupola and its open hatch lid as well as the extended front mud guards. The Panther also has Zimmerit applied; note the bare areas on the forward superstructure sides where standard tool stowage has been removed.

A pair of crewmen work on the interleaved road-wheels on this early production Panther Ausf.D. Note the number of bolts around the wheel rims (16) which are only seen on very early Panthers. Note also the storage position of the idler tensioning tool, beneath the gun tube cleaning rod/antenna rod storage tube. This was changed on later Ausf.Ds to the opposite side of the superstructure. Note the configuration of the hangers for the hull Schürzen (a Panther's lower side was vulnerable to Soviet infantry anti-tank rifles) as well as the means by which the armor plates interlocked during the construction process.

This Panther Ausf.D has an earlier turret with an "MP Stopfen" (machine-pistol port with plug) on the rear plate, to the left of the escape hatch. It is missing the external gun travel crutch, which should be in place over the ventilation fan cover, on the center of the forward edge of the hull roof.

An SS Panther Ausf.A moves through a French town on its way to meet the Allied armies in Normandy; note the long L/70 gun tube locked in the travel crutch. It is from SS-Panzer-Regiment 1, of 1.SS-Panzer-Division "LAH". It features spare track hung on the turret sides as well as what's probably an anti-aircraft MG mount on the commander's cast cupola, under the cloth; the hull MG34 as well as the main gun are also protected from the elements by cloth covers. Only one Schürzen section remains on the near side, although all of the hangers are still intact. It is covered in Zimmerit anti-magnetic mine paste. The color scheme has the base of dunkelgelb almost completely covered with olivgrün and/or rotbraun.

This column of Panthers is led by an Ausf.A (note the cast cupola), which has the full front mud-flap extensions. The 7.5cm KwK42 L/70 gun is resting in the travel crutch. It would appear that the second Panther is an Ausf.G, since there is no view-flap on the upper glacis plate, although at this distance it's hard to say. The Ausf.A has parts of a tactical number, in white, visible on the side of the turret, but is otherwise unremarkable in appearance.

A pair of abandoned Panthers as well as another tracked vehicle litter a road, which, by the looks of the statues, fountains and trees, could be somewhere in Italy. The Panther in the center of the photograph is an Ausf.A, readily identified by the MG ball mount and the open driver's visor on the upper glacis plate. It is covered in Zimmerit and still wears most of its Schürzen. It is finished in a monochrome coat of dunkelgelb and carries no visible markings. Note the spare road wheels on the turret roof and engine deck.

The crew of this Panther Ausf.A pose with their disabled panzer under the cover of some trees. They all wear the later reed-green version of the panzer crew uniform, but with the traditional black side-cap. There is a Tac number on the side of the turret, which is not legible at this angle. There is also a "Fliegerbeschussgerät" (anti-aircraft mount) on the cupola ring, but no MG34 is attached to it.

A heavily stowed Panther Ausf.A awaits orders to pull out, under the watchful eyes of a group of infantrymen. Aside from the usual tool, cable and spare track stowage, this panzer also carries a large wood beam, probably for use in extricating itself from ditches. There is also a 200-liter fuel drum on the engine deck (indicating a road march is being contemplated) and a bucket hanging from the triple exhaust pipe on the hull rear. It carries a full set of Schürzen, while the vehicle jack is stored in a later horizontal position. The relatively crudely applied tactical number ("815" in yellow or white) places this panzer in the 8.Kompanie of a Panzer-Regiment's II.Abteilung. The panzer is coated in Zimmerit and finished in a base of dunkelgelb, with patches of a secondary color.

This Panther Ausf.A sports Zimmerit as well as a monocular T.Z.F.12a gun-sight aperture in the mantle with a rain guard welded over it. The turret also has retro-fitted hangers for spare tracks, as well as a rain guard above the mantle. Note also how the driver's visor opens and how it is supported. When the "Kugelblende" (ball mount) for the MG34 was installed on the upper glacis plate, the radio operator's forward-facing periscope (seen on the Ausf.D) was eliminated.

This Panther Ausf.A has been stripped of many useful items, notably the tools and spare track, as well as many of the road wheels. Note that all outer wheels have been removed, as well as one of the pair on the fifth wheel station from the front. This affords a rare view of this configuration. The panzer is covered in Zimmerit, but only on areas not normally blocked by tool or spare track storage. The base color is dunkelgelb with a "curlicue" pattern composed of the supplementary colors of olivgrün and rotbraun. The Tac number, "214" in solid white characters is also seen on the turret rear, partially on the escape hatch.

A pair of US soldiers pose on the side of a captured Panther Ausf.A, which appears to be in very good condition. It would appear that this is an earlier Ausf.A since there is no "Kugelblende" (ball mount) for the glacis plate-mounted MG34, which should be visible at this angle. The panzer is coated in Zimmerit and has most of its compliment of external stowage; note the white outline Tac number "333" on the side of the turret and the placement of the balkenkreuz national insignia on the superstructure side, near the front mud guards.

A group of children lounge atop a derelict Panther Ausf.A while a pair of adults makes a close inspection of this once formidable panzer. It has a Zimmerit coating and wears a Tac number ("412") on the turret side, either in red or black. Most of the suspension and track on the near side has disappeared, as have the tools and probably anything else of use (note the opened storage lockers at the panzer's rear). It is finished in the base of dunkelgelb with a light blotchy overspray of rotbraun and olivgrün.

A rear view of the same Panther Ausf.A now shows the turret in the six o'clock position. More road wheels as well as an idler wheel have disappeared and the circular access plate on the hull rear has been removed. Note also the curious, cut-down condition of the right-hand storage locker, as well as the jerry can racks inboard of each locker. This relatively early Ausf.A has only the twin exhaust pipe arrangement and vertically oriented brackets for the storage of its missing jack.

Most of an infantry section, including their MG42 team, dismounts from a Panther Ausf.G. This panzer is identified as an Ausf.G by the location of the Bosch head-lamp, the absence of a driver's vision flap, as well as the configuration and position of his rotating periscope at the forward edge of the hull roof/glacis plate joint. Note the Schürzen plates, which are of a different pattern from the Ausf.D and A. This early Ausf.G is covered in Zimmerit, and has a base coat of dunkelgelb; there are no visible markings.

This foliage-covered Panther Ausf.G is identified by the continuous slope of the superstructure-side armor plate, as well as the position of the Bosch head-lamp on the driver's side fender. It also carries the so-called "Ambush Pattern" camouflage which was factory applied at the same time that German panzers were ordered built without Zimmerit anti-magnetic mine paste. Camouflage was to be applied at the factory and consisted of primer rot RAL 8012 as the base color, with dunkelgelb and olivgruen patches and spots, either sprayed on or hand-painted. No markings are visible. It does not have the new pattern Schürzen, while another later feature, the rain guard over the gun mantle can be clearly seen.

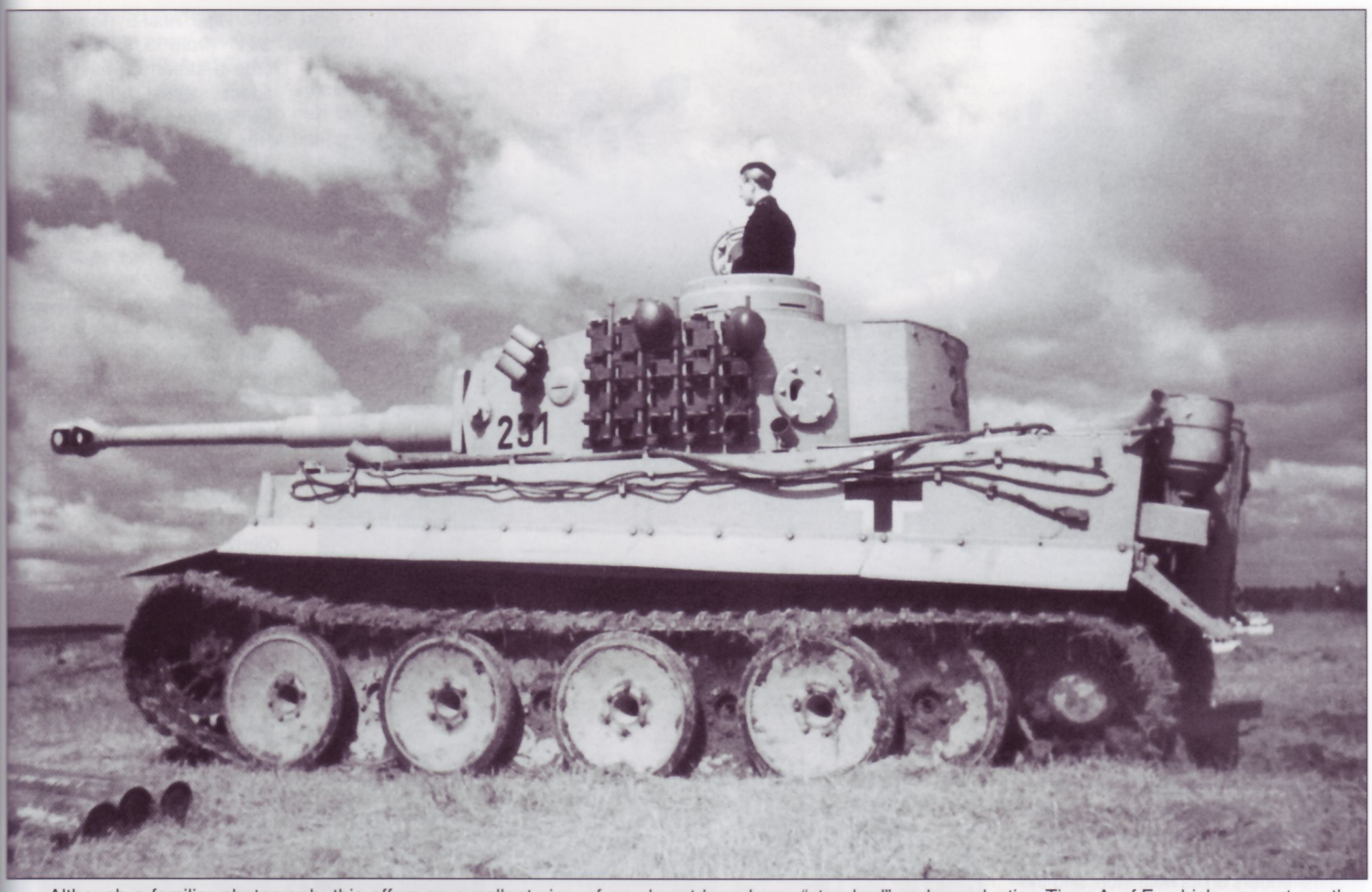
This later Panther Ausf.G is painted in the factory-applied camouflage scheme that could possibly be the type with a base of olivgrün, with patches of rotbraun and dunkelgelb. The turret sports Tac numbers ("322") in either black or red, with a white outline. This identifies the panzer as belonging to a Panzer-Regiment's I.Abteilung, 3.Kompanie, second vehicle of the second platoon. It carries standard stowage items on the near side and still retains some of its Schürzen plates.

This Panther Ausf.G exhibits many features of the final production series. These include high fan tower for the "Kampfraumheizung" (crew compartment heater) and "Flammvernichter" (flame-dampening) exhaust mufflers. Note also the vertical storage of the vehicle jack as well as the heavy-duty tow point on the circular engine access plate. This view also illustrates how the Schürzen were hung; careful scrutiny will show that the plates overlap each other, with the forward-most on top of the one behind it, etc. This made it slightly less-likely that the plates would be torn off. This panzer has a hand-applied whitewash consisting of short strokes, spots, blotches and cross-hatch patterns over what should be a factory camouflage scheme of either rot primer or olivgrün base. There appears to be an open space on the turret within which may be a tactical number.

An American soldier poses on a knocked-out Panther Ausf.G, while in the background rests another similar panzer. Note the unusual placement of the balkenkreuz national insignia on the superstructure side, just below the rear edge of the turret. This panzer is covered in Zimmerit and is finished in dunkelgelb base with the supplementary colors of olivgrün and rotbraun sprayed on in broad mottled patches. Note that the Bosch black-out driving head-lamp (mounted on the far mud guard) has lost its cover. The purpose of the unusual device on the Dodge WC-series truck is not known; it would appear to be a bit elaborate for use as a wire-cutter, something which was a commonly fitted to the bumpers of US wheeled vehicles to prevent injury from wires strung across roads.

This abandoned Panther Ausf.G is fitted with the higher fan tower for the "Kampfraumheizung" (crew compartment heater), on the engine deck. The stowage lockers on the rear plate are thoroughly crushed; note the balkenkreuz on the left-hand locker. The configuration of the exhaust pipes is also curious, as their ends point vertically, instead of being bent to point rearwards. This would appear to be a deliberate modification, as the shields around the pipes are not crushed like the stowage lockers.

A crewman covers the tracks of a well-hidden Tiger I from possible enemy aerial observation; note the tattered appearance of the seat of his trousers. This is a relatively early vehicle as evidenced by the straight configuration of the hull-side extensions for the tow shackles. The Bosch head-lamps are not mounted in their usual places on each of the superstructure front corners. Both the main gun and the bow MG are covered with their custom-fitted dust covers, indicating the panzer is conducting a road march, with combat not imminent. It is un-clear what the purpose of the ladder-like device is on the upper glacis plate. This Tiger is finished in a base of dunkelgelb with faded blotches of secondary colors, probably olivgrün and rotbraun.



Although a familiar photograph, this offers an excellent view of an almost brand-new "standard" early-production Tiger Ausf.E, which was yet another designation for the Tiger I. Many stowage items are to be seen such as the tow cables on the superstructure roof, as well as the track-changing cable on the side. The turret has five spare track links mounted along with some of the crew's steel helmets on top of them. This panzer also has the full array of triple smoke launchers on the turret as well as S-mine dischargers on the corners of the superstructure. It has a complete set of fenders as well as mud flaps fore and aft and is fitted with the "Feifel" air filter system on the hull rear plate. It is covered in a base color of dunkelgelb and has the Tac numbers "231" in black on the turret sides as well as the rear stowage locker. These and the oversized balkenkreuz on the superstructure side identify this Tiger as belonging to 2./s.Pz.Abt.502.

Another Tiger Ausf.E, this time from 3./s.Pz.Abt.502, illustrates more features of the early-production type, such as the MP port on the near-side rear of the turret. Note the mounts for the Bosch head-lamps, which themselves are not fitted, as well as the S-mine discharger which can be seen just below the driver's hatch. The turret rear-mounted storage locker is opened, while the usual spare tracks are also mounted. The three locking handles, as well as the head pad on the cupola lid are also plainly visible. This Tiger I is finished almost exactly like that in the previous photograph, except that it also has Tac numbers ("314") on the superstructure sides.

Tiger Ausf.E, Tac number "311" (from 3./s.Pz.Abt.502), fords a stream. It has a small ladder stowed on the upper glacis and dust covers fitted over the main gun as well as the hull MG mount. Note also the periscope just forward of the loader's hatch, which was ordered to be fitted starting in March 1943. This view shows the hinges for the front mud flaps to excellent advantage. These, as well as the rear mud flaps could be folded over; then, the side sand shields/fenders and the outer road wheels were removed, and finally, the wide cross-country tracks were exchanged for narrow "transport" tracks. This was done to prepare the overly-wide Tiger I for transport on specially-designed six-axle railway flat-cars.

A group of Tiger Is next to a rail siding are depicted in the act of either preparing to change tracks for rail transport, or completing the task of mounting the cross-country tracks for combat operations. Note the narrow tracks laid-out in front of the near panzer, the removed sand shields/fenders on its near side, and the folded-up forward mud flap on the far corner of the hull front. Behind it, there appears to be a Bergepanther parked next to a fence. There appears to be a tactical number ("33") on the turret side of the near panzer, while it also has spare tracks on the corners of the superstructure front plate, a characteristic of Tiger Is belonging to s.Pz.Abt.507.

This companion photo to an earlier image of a Pz.Kpfw.IV shows a Tiger I belonging to the "schwerer Kompanie" (heavy company) of SS-Division "Das Reich", several months after the battle for the Kursk salient. The division's temporary marking of a white horizontal bar topped by two vertical bars is plainly seen on the superstructure front plate, while the company's white gnome insignia can be seen on the turret side. This Tiger I has S-mine dischargers on the hull roof, but does not have a periscope in front of the loader's hatch on the turret roof. The mantle has reinforced armor over the two openings for the TZF9b binocular gun sight.

A so-called "mid-production" Tiger I is seen on the snow-covered Ostfront, with a Pz.Kpfw.IV Ausf.G or H in the background. There is a heavy motorcycle/sidecar combination next to it, probably a BMW R75. The panzer has the new cast commander's cupola, which was ordered into production during July of 1943, as well as a periscope in front of the loader's hatch on the turret roof. The Tiger I is covered with Zimmerit anti-magnetic mine paste that was ordered to be applied at the factory during August of 1943. This is in turn covered in a winter whitewash; the base color would be dunkelgelb, possibly with the two supplementary camouflage colors applied.

This Tiger II belonging to s.Pz.Kp.(Fkl.)316 was disabled in Drieux, France in November of 1944. The company was attached to Panzer-Lehr-Division since early 1944. It is a very early machine (reportedly among the first five production vehicles) as indicated by the Krupp turret, which was designed to fit on the aborted Porsche Tiger II chassis. Other early features are drive sprockets with 18 teeth, as well as the deep-fording cover on the rear of the engine deck. The single-piece 8.8cm KwK43 L/71 gun tube (seen here) was soon replaced by the sectional version. The panzer is covered in Zimmerit and finished in a base of dunkelgelb; note the very large Tac numbers ("11") on the turret and the partially obscured balkenkreuz national insignia beneath the forward fender section.

This photo also depicts a Tiger II of s.Pz.Kp.(Fkl.)316, which had been disabled. This company was equipped with the first five Tiger IIs to be produced, three Tiger Is, nine StuG.IIIs and dozens of radio-controlled Borgward B-IV demolition vehicles, thus the designation "Fkl.", the abbreviation for "Funklenkpanzer" (radio-controlled tank). Note again the 18-tooth drive sprocket and the early turret with the one-piece gun tube. The Tiger II is covered in Zimmerit with a base color consisting of dunkelgelb. The large Tac number, "02" is painted in white; note also the style and location of the balkenkreuz national insignia.

An early Tiger II (also designated Tiger Ausf.B) of s.Pz.Abt.503 receives a field-applied camouflage covering over its base of dunkelgelb. The panzer also has Zimmerit, which was discontinued in September of 1944. The turret is an early "Serienturm" (series production turret) built by Krupp, which is distinguished by the lack of hangers for the spare tracks on its sides. The previous turret, also built by Krupp for the cancelled Porsche Tiger II, was never a "Porsche Turret", as that manufacturer did not produce turrets. This panzer has the later and more common 8.8cm KwK43 L/71 "mit geteiltem Rohr" (sectional gun tube). Note the power conduit on the upper glacis leading to the Bosch head-lamp.

Clothed in a shroud of fallen snow, this abandoned Tiger II lies derelict in a destroyed town, while what appear to be British/Commonwealth troops inspect their once formidable adversary. This Tiger II has the "Serienturm" (series production turret) built by Krupp and mounts an 8.8cm KwK43 L/71 "mit geteiltem Rohr" (sectional gun tube).

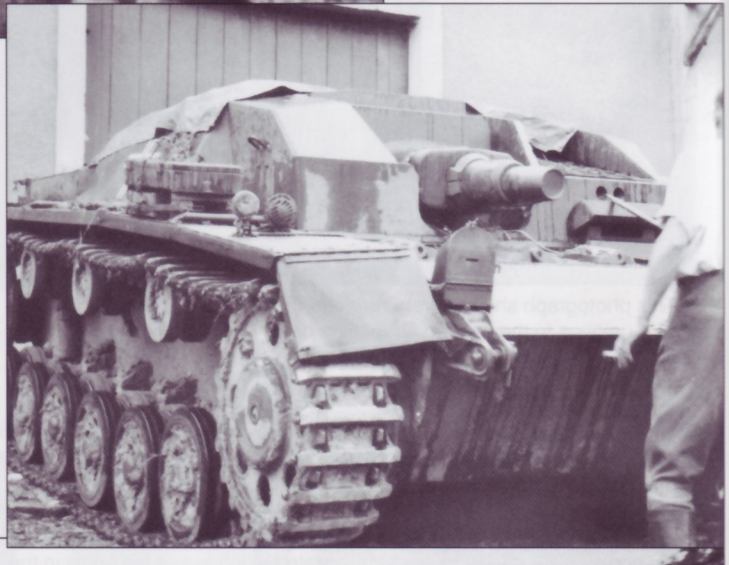
An American soldier poses atop a later production Tiger II, probably in the spring of 1945. Of interest is the second style of "smooth" gun mantle without the ridges around its circumference and the 8.8cm gun in full recoil. The latter indicates that the crew disabled the gun by removing hydraulic fluid from the recoil apparatus, and then firing a round. The panzer is fitted with narrow transport tracks and is fitted with an 18-tooth drive sprocket, which was re-introduced towards the end of the war. The front mud flaps also have the reinforcing rib seen on late-production Tiger IIs, while the turret still retains the ring for the AA machine gun mount and has mounts to carry only four track sections on each side. Later turrets dispensed with the ring and had a different configuration for the track storage, so that the new single-link Kgs 73/800/152 battle tracks would fit. Finally, this panzer is painted in a base of olivgrün, with dunkelgelb stripes and spots in the so-called "Octopus pattern" (which is not an official term, but a convenience used by scale modelers). Of special interest is the "checkerboard" paint pattern seen on the near corner of the superstructure, behind the small tree.

This photograph shows a very rare sub-type of the equally rare StuG.III Ausf.A. It belongs to the second production batch of 20 vehicles, which were derived from Pz.Kpfw.III Ausf.G chassis. It is identified as such by the chassis number on the lower glacis plate, 90403. Other identifying features of this variant are the configuration of the hatch hinges on the upper glacis plate as well as the bolted-on armor on the lower glacis plate. These assault guns saw service after the end of the French Campaign and would have been finished in a solid covering of dunkelgrau RAL 7028. Note the presence of a Notek black-out driving head-lamp, which also would date this photo as post-June 1940. The officer in front of the StuG wears his trousers bloused over his boots, while the Hauptwachtmeister to the left wears his boots in the standard fashion with breeches tucked in; note the cuff-bands on both of his sleeves.

A group of infantrymen move along the side of a road, supported by a StuG.III Ausf.B, which is itself followed by an Sd.Kfz.252 ammunition carrier. The StuG is identified as an Ausf.B by the configuration of the periscope gun sight aperture.

Another StuG.III Ausf.B, this time crossing a small river, shows some of its distinguishing characteristics. Note the way the "tunnel" that leads to the gun sight aperture is interrupted at intervals by strips designed to deflect bullets and fragments from a straight path into the otherwise un-protected opening. Compare the way the hinges on the upper glacis plate are configured, to the Ausf.A in a previous photograph. Note the open-style of the white-outline balkenkreuz national insignia as well as the stripes around the gun tube, which represented "kills" made by this assault gun. There is a cover fitted to the bore of the gun tube and brush-guards around the head-lamp arrays on both fenders.

A pair of StuG.III Ausf.Bs are led past other German panzers (in this case Pz.Kpfw.II Ausf.A, B or C with the circular commander's cupolas) by their battery commander's Sd.Kfz.253. Note the white "Z1" on the '253, just aft of the balkenkreuz (which has had its borders cleaned up a bit so they are more prominent). It appears that the assault guns are covered in a white-wash over their dunkelgrau base color, which probably places them in the winter of 1941/42, on the Ostfront.



In this photo, an attempt is being made to clean a StuG.III Ausf.B. Note the way the roof is covered with a tarp and the relatively large, white-outline balkenkreuz on the superstructure side spaced armor panel. The assault gun has the earlier narrow 38cm tracks as well as the narrow road-wheels. This photograph provides an excellent view of some of the vehicle's fittings such as the tow points, fender hinges, horn, head-lamp, marker lamp and fender configuration. Note also the tool box just behind the marker lamp, and how it is mounted in an elevated position over other tools.

An Sd.Kfz.253 leads a battery of StuG.III Ausf.Bs past a group of German 3-ton trucks (probably from a communications unit). The '253 tows a small trailer, but the configuration of the superstructure identifies it as not being an Sd.Kfz.252 ammunition carrier, which would normally haul an ammunition trailer.

A StuG.III Ausf.B stands amid a group of German troops milling about on a road, where some action apparently has just taken place. Of note on the assault gun is a white-outline balkenkreuz and what is probably a letter (on the superstructure forward of the spaced armor panel) indicating the vehicle's place within its battery. Also of note is lack of most standard vehicle fittings and stowage items on the near fender, and the large timber beam further back along the superstructure side.

A pair of StuG.IIIs (at this angle, they could be either Ausf.B, C, D or E) pass a section of radio-equipped troops, somewhere on the Ostfront. As the periods of combat lengthened, the supply situation for Germany steadily worsened. Thus, many combat vehicles began carrying large amounts of spares and consumables. The near assault gun typifies this trend by mounting spare tracks on its engine deck, which also act as a framework to keep other loose items in place, such as the buckets towards the left.

This StuG.III Ausf.E is crewed by Luftwaffe troops, suggesting it is part of the "Hermann Göring" formation (note their collar tabs, the commander's hat insignia and their cuff title bands). It is identified as an Ausf.E by the configuration of the superstructure, above the driver's compartment. The earlier aperture for the gun sight has been eliminated and the plate angle changed. The hinges for the hatches on the upper glacis plate have also been re-designed. It is probably finished in the "tropen" (tropical) color scheme of braun RAL 8020 and grau RAL 7027, which would have been applied to vehicles assigned to combat in the Mediterranean area, such as Italy and Tunisia, both destinations of elements of this elite Luftwaffe formation.

An initial-production StuG.III Ausf.G stands ready to do battle, as it emerges from a shed somewhere on the Ostfront. This model had a steeper angle to the plates on the superstructure side extensions, which are not visible here. What positively identified this as an initial-production vehicle are the two circular ports for the driver's periscope, just above his view-port. Note also the characteristic bolted-on 30mm armor plates on the superstructure front plates, as well as the upper and lower hull glacis plates. The assault gun still appears to wear a winter white-wash over its original dunkelgrau base coat (since these were produced in December of 1942, before the three-tone system, when the dunkelgelb base color became the new standard). The crewman wears the field-grey version of the panzer crewman's uniform, which was a distinction of the assault gun troops, who were officially part of the artillery branch.

This assault gun is identified as a StuG.III Ausf.F/8 primarily by the configuration of the hull's rear plate. The characteristic raised central part of the superstructure roof, incorporating the circular fume extractor fan cover, was introduced earlier by the initial Ausf.F. The assault gun has a Gothic "D" (gun "Dora") on a light-colored area on the rear plate, next to a standard black/white balkenkreuz. The color scheme appears to be a base of dunkelgelb with a mottle pattern consisting of one or both of the supplementary colors (olivgrün or rotbraun).

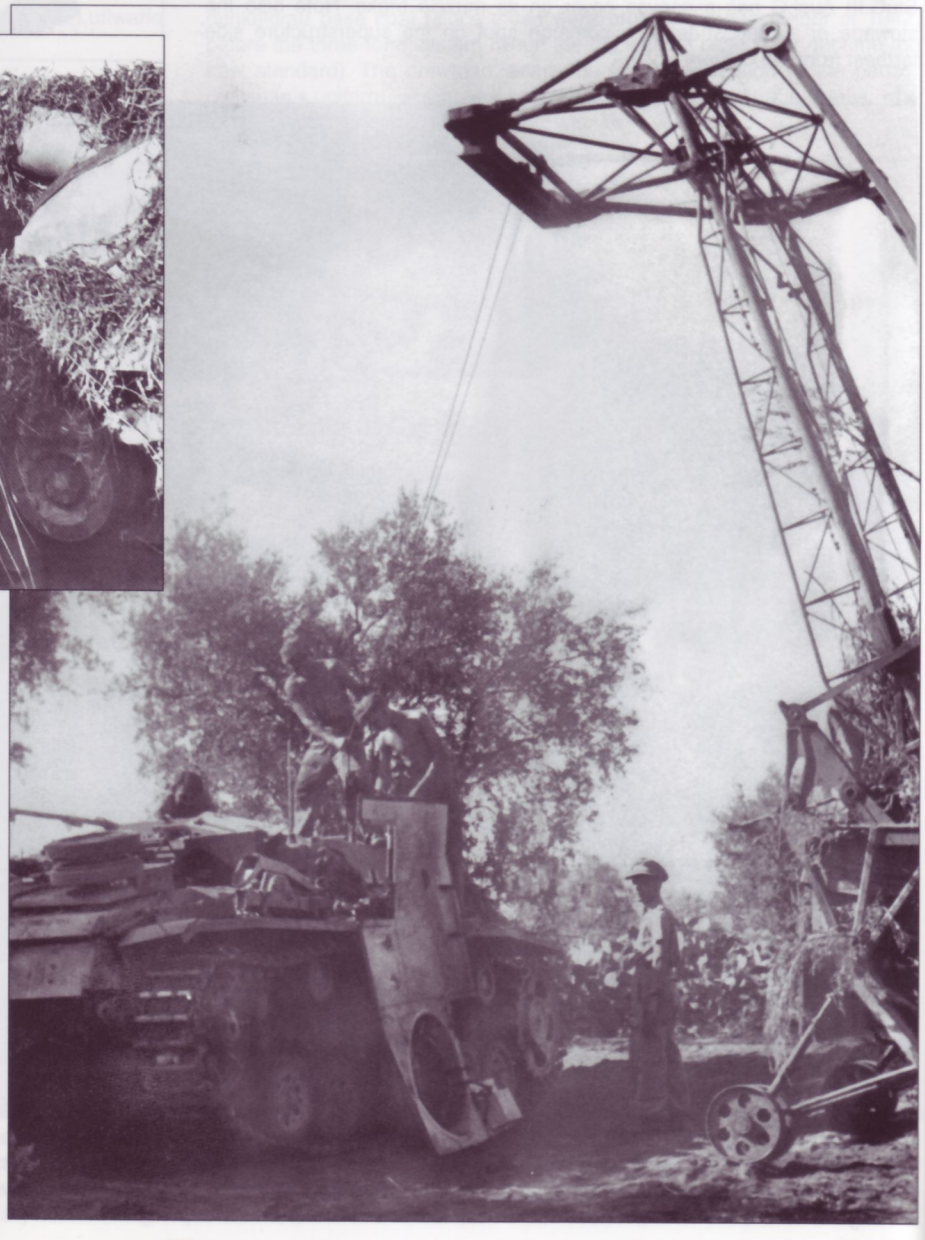
A group of rather surly members of the Luftwaffe pose next to a well-camouflaged StuG.III, probably an Ausf.G. The troops wear a variety of uniforms including, from the right, an assault gun crewman's field-grey uniform, a Fallschirmjäger's uniform including helmet and jump smock, another assault gun crewman's uniform, an officer in tropical tunic and two seated men wearing their trousers tucked into long boots.

Another group of assault gun crewmen stand before a high-ranking officer on the snow-bound wastes of the Soviet Union. They wear the padded reversible two-piece winter suit, some with the mouse-grey side exposed, others with a very dirty white side exposed. Their white-washed StuG.III Ausf.G has a canvas cover on its muzzle brake. Note also the stowage of a road-wheel in a common spot on the superstructure side farthest from the camera.

A well-camouflaged StuG.III Ausf.G passes a knocked-out Soviet T-34 Model 1943 with a commander's cupola and sharp-nose hull front (characteristic of tanks produced at Factory 174 during the spring of 1943). The assault gun has bolted-on 30mm appliqué plates on the upper and lower glacis plates as well as the front plate of the driver's compartment. Those plates were originally 50mm, so the vehicle now had 80mm of armor plate on its front. The only stowage of note is the steel helmets, one on the roof, with another on the superstructure side.

A later model StuG.III Ausf.G speeds past the ruins of some sort of industrial structure. Note the 80mm upper and lower glacis plate armor; compare its configuration to that of the assault gun in the previous photograph. There is a folding shield for the loader's MG34/42 as well as concrete reinforcement of the superstructure front. Note the Schürzen, with a balkenkreuz on the forward-most panel. The camouflage very likely consists of a base of dunkelgelb with large areas covered in the supplementary colors of olivgrün and rotbraun.

This detail photograph shows a StuG.III Ausf.G with a concrete-reinforced front superstructure. The 7.5cm StuK40 L/48 has a canvas cover on its muzzle brake and part of the fender is missing.



A StuG.III Ausf.G receives some serious attention from a maintenance team; note the removed roof plate leaning against the assault gun's side. The uniform on the man standing between the vehicle and crane, as well as the terrain, suggest that this may be a "Hermann Göring" assault gun.

This destroyed StuG.III Ausf.G has had much of its suspension blown away, as well as the roof plate, making it very likely that it is not salvageable. It has a later cast "Topfblende" (pot mantle), which is usually incorrectly called a "Saukopfblende" (pig's head mantle). It also has the so-called "waffle pattern" Zimmerit, which was a characteristic of the Alkett factory; note how it is also applied to the lower side of the hull. There is a single balkenkreuz applied to the superstructure side, which is covered in a base color of dunkelgelb; any other colors are hidden under dust or stains from battle damage.

While troops seek cover on its rear deck, this StuG.III Ausf.G fires its main gun at the enemy. Note the storage of the engine starter crank on the rear plate, the standard stowage of two spare road-wheels on each of the rear-most engine ventilation cowls, as well as the erected MG shield on the superstructure roof.

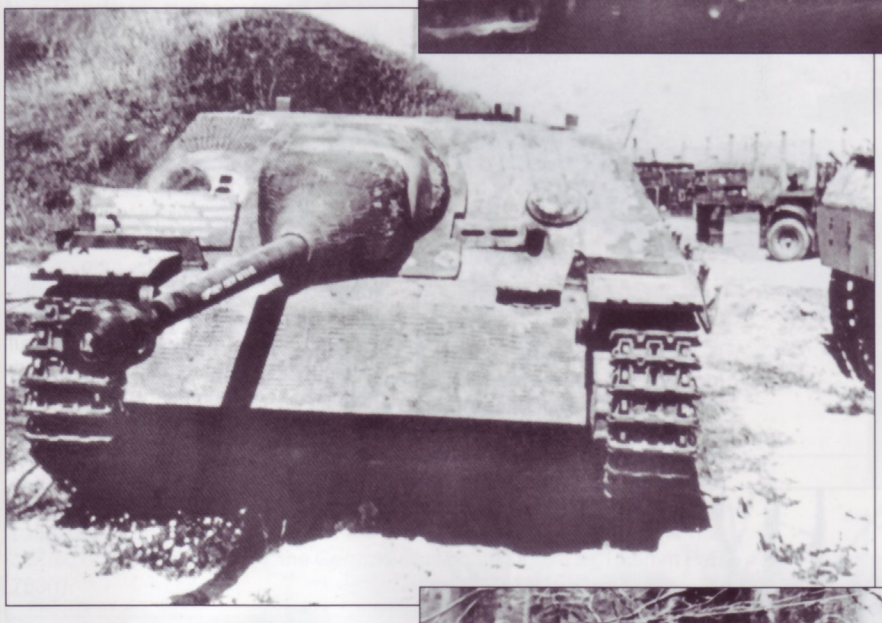
This later StuG.III Ausf.G has a number of interesting features. It is fitted with the wider "Ostketten" (east tracks) on its running gear and also has these as spare track sections on the superstructure front angled plates. It has 80mm armor as a basis; note the upper and lower glacis plates as well as the lack of bolts on the single 80mm plate on the near, vertical corner of the superstructure front. A gun travel crutch is fitted next to the Notek head-lamp, while the gun itself is housed in a cast "Topfblende" mantle. Note the improvised gun shield around the loader's MG; at first glance it would appear to be the standardized "Rundumfeuer" rotating remote-control mount. However, it more closely resembles the MG shield commonly seen on German armored half-tracks.

To further supplement the supply of assault guns, Germany also fielded a hybrid vehicle based on a StuG.III Ausf.G gun and superstructure mounted on a Pz.Kpfw.IV Ausf.H or J chassis; this was designated StuG.IV. Seen here is an earlier version as evidenced by the folding shield for the loader's MG34 on the superstructure roof and the earlier drum-type exhaust muffler on the hull rear. Note the four-digit tactical number "4334" on the superstructure side, just forward of the balkenkreuz national insignia. This assault gun appears to have been covered in Zimmerit paste and has lost its Schürzen plates, although the rather distressed mounting rail and frames are still retained.

A line of new StuG.IVs halts on the side of a road. Note that they have Zimmerit paste and are finished in a monochrome base of dunkelgelb. There is a black/white balkenkreuz on the driver's compartment side. Features to note are the "Topfblende" cast gun mantle, reinforced armor forward of the commander's cupola, and the rain gutter just behind the driver's hatch. Note also the tool, spare road-wheel and track storage, as well as the mounting rails for Schürzen.

This line-up of StuG.IVs is led by the rarely-photographed Befehlspanzer IV; note the rod antenna on the turret roof and the star antenna on the rear. The StuG.IVs all have the earlier folding MG shield and are fitted with Schürzen and/or the mounting rails; there is a balkenkreuz national marking on the middle Schürzen plate of the first StuG.IV.

The crew of this StuG.IV, together with the crew of a 3-ton supply truck, load rounds for their 7.5cm StuK main gun, using the tried-and-true "human chain" method. The StuG.IV has the often-seen addition of a concrete panel on the front plate of the driver's compartment, as well as Zimmerit paste. The crewmen appear to be wearing a tropical uniform and may be Luftwaffe troops.



It would appear that this vehicle is a pre-production version of the Jagdpanzer IV, designated as a "Jagdpanzer IV A-0". It has the curved superstructure front with two MG ports as well as a muzzle brake on the 7.5cm PaK39 L/48 main gun. Zimmerit past has been applied. Note the shell penetration just to the right of the driver's visor, the sign on the opposite fender and the legend on the gun tube.

Another vehicle based on the ubiquitous Pz.Kpfw.IV chasis was this Jagdpanzer IV, which mounted the same type of gun as the Jagdpanzer 38, the 7.5cm PaK39 L/48. This "hunting tank" (or tank-destroyer) has had its superstructure front and sides covered in concrete for added protection; note the cut-outs for the Schürzen mounting hangers as well as the area around the MG port cover. Note the open engine deck access door with the integral fans for the Maybach HL120 TRM engine, the Zimmerit paste on the mantle and rear-most armor plate (which also has a black/white balkenkreuz national marking).

This Jagdpanzer IV has suffered an internal explosion, which has separated the armored superstructure from the hull. The ammunition was stored in unprotected racks on the inner walls of the 40mm superstructure sides; any serious penetration accompanied by a fire, was bound to set them off with catastrophic results. A curious US soldier inspects the remains.

A far more potent development of the Jagdpanzer IV, was the Panzer IV/70 (V), which mounted a variation of the Panther medium tank's 7.5cm KwK42 L/70 main gun, designated 7.5cm PaK42 L/70. This gun could destroy nearly any tank in existence at ranges up 1,000 yards; some at even longer ranges. Note the crutch on the glacis plate, which was needed to secure the gun's heavy tube during travel. This Jagdpanzer also has the later transmission/final drive access hatches, which dispensed with the air cooling vent cowls, replacing them with handles. A catastrophic explosion has torn the roof plate from the vehicle.

An abandoned Panzer IV/70 (V) is seen from the rear. This affords a view of some late-production features such as: "Flammvernichter" (flame-dampening) exhaust mufflers and hull side plates extended and drilled to act as tow hook attachment points; it is difficult to tell, but there may also be only three (instead of four) return rollers on the hull-side suspension system. Note also the storage of spare road-wheels (including a steel-rimmed pair), the jack and spare tracks, all on the rear deck.

The commander of an Sd.Kfz.221 armored scout car receives a welcome from some local villagers, probably somewhere on the Ostfront during the opening stages of "Operation Barbarossa". Considering the sign proclaiming a welcome and a salute to Hitler, this may be a staged propaganda photograph. The armored car is identified as a '221 by the slope of the upper rear plate and the small MG turret. There is a Nazi flag used as an aerial recognition device on the rear deck, as well as a black/white balkenkreuz on the hull side. Note the Soviet 14.5mm PTRD anti-tank rifle carried on the vehicle's side; the Germans designated these as 14.5mm PaB 783(r).

An Sd.Kfz.222 of the SS-Division "Leibstandarte Adolf Hitler" (note the "key-in-shield" insignia on the superstructure rear panel) supports an MG34 crew as they attempt to suppress enemy resistance, probably during the campaign in the west in 1940. The SS troops wear their trade-mark camouflage smocks with matching helmet covers.

An Sd.Kfz.221 (converted into an armored radio car) makes its way along a muddy village street during the invasion of the Soviet Union. The upright "Y" insignia of the 7.Panzer-Division, in yellow, is seen on the front fender, as is a small stenciled white pennant indicating a battalion command group. The retro-fitted "Rahmenantenne" (frame antenna) is in a rather dilapidated state, indicating hard service. Note also the Notek black-out driving system head-lamp, mounted on the glacis plate, between the standard canvas covered head-lamps.

An Sd.Kfz.223 armored radio car stands on the side of a village street, while a column of trucks passes through. At left is a column of horse-drawn supply wagons. It is an Ausf.B as indicated by the style and placement of the vision ports on the turret. The '223 wears the segmented circle of a motorcycle reconnaissance unit on its left-rear fender (just above the Notek tail-lamp array, as well as a license plate on each fender (unfortunately obscured). The balkenkreuz national insignia, in black with a white outline, is painted on to an appliqué armor plate which was fitted to this series of armored cars to cover the radiator grill. This photo probably dates from the spring of 1941, during the campaigns for Greece and the Balkan states.

A column of German armored cars parks along a boulevard in a Greek city during the campaigns of the spring of 1941. The first is a le.Pz.Sp.Wg. (Fu) Sd.Kfz.223 (note the folded-down "Rahmenantenne"), followed by a Sd.Kfz.221. The dunkelgrau-painted vehicles are thoroughly covered in dust, so much so, that they appear to be painted in the later dunkelgelb base color. Note the storage of un-ditching battens and jerry cans on the glacis plates of the first two armored cars as well as such details as vehicle width-indicator poles, Notek head-lamps, horns, canvas-covered head-lamps, and finally, the different patterns of driver's visors.

An Sd.Kfz.232 (6-Rad) heavy armored radio car stands idle on the streets of Vienna, Austria, during Hitler's annexation of that nation into his fledgling Third Reich. This ungainly armored car is built on a commercial Büssing-NAG chassis; others were built on Magirus chassis. This vehicle wears Wehrmacht Heeres license plates and is probably painted in the pre-war "Buntfarbenanstrich" (fireproof colorful pattern) camouflage scheme of Nr.17 erdgelb-matt, Nr.28 grün-matt and Nr.18 braun-matt.

An Sd.Kfz.231 (8-rad) heavy armored car passes on parade through a German town, early in the war. This was a purpose-designed heavy armored car, as opposed to the six-wheeled heavy armored cars, which were expedient designs based on commercial chassis. The "eight-wheelers" had all-wheel drive and steering, and could be driven at the same speeds in both directions, thanks to a transmission with six forward and six reverse gears, as well as driver's stations fore and aft.

This heavily-retouched photo depicts a pair of Sd.Kfz.232 (6-Rad) heavy armored radio cars, also probably in Austria. These are built on the Magirus commercial chassis. Note the rain guards over the various hatches and view-ports, the dome over the rear driver's station and the covered spare wheel on the vehicle's rear. These vehicles have the same designations as the more familiar (and later) Sd.Kfz.232 (8-Rad) eight-wheeled armored cars, because they fulfilled the same tactical function.

An Sd.Kfz.231 (8-rad) leads an Sd.Kfz.223 through a shattered town, probably during the French Campaign in 1940. They are accompanied by a heavy motorcycle combination based on the BMW R75. All the vehicles are heavily covered in dust, which makes the base colors appear much lighter than they actually were, due to the way light is reflected. The sole markings visible are a white-outline balkenkreuz on the '231 and a Tac sign on the R75.

This destroyed Sd.Kfz.231 (8-rad) has some features of both early and later production versions of this vehicle series. The main gun is still the older 2cm KwK30, but it has the retro-fitted "Zusatzpanzer" mounted on a frame on the hull front and the later armored visors on the hull and turret. Later turrets dispensed with the visors on the forward-most side plate, but this one still retains it. Note the foliage camouflage inserted into chicken wire, the tread pattern of the front tire and the Panzerfaust anti-tank weapon laying on the ground along side the second wheel.

An excellent view of an Sd.Kfz.232 as it leads a column of light armored cars during the Polish Campaign on September, 1939. Note that the solid-white balkenkreuz national insignia, which characterized German AFVs during this time period, is carried over to the tools stored on the glacis plate. The tactical marking denoted a motorized rifle unit, while the "Rc" notation is a puzzle. The license plate, "1091", does not contain a "WH" prefix. The vehicle should be finished in the two-tone scheme of dunkelgrau Nr.46 base with dunkelbraun Nr.45 overspray. Diorama modelers should note how saplings have been planted on the side of the road, supported by thicker limbs, which themselves are marked for night-time drivers by white-painted stones; apparently, the vehicle's drivers have also taken note and not trampled them.

This s.Pz.Sp.Wg. (Fu) Sd.Kfz.232 is seen in a Polish city during the 1939 campaign. Note the solid-white balkenkreuz national insignia at the apex of the superstructure side armor plates. From the rear this heavy armored radio car can be easily mistaken for a Sd.Kfz.263. However, note the large single hatch on the rotating turret, the way in which the frame antenna pivots on the turret and the lack of a "Kurbelmast" (telescoping antenna mast) on the rear deck. All of these are traits of the Sd.Kfz.232.

Although the original photographer could have used a lesson in composition, this image remains of interest for several reasons. The vehicle can still be identified as an Sd.Kfz.232, since the "Rahmenantenne" support bases can be seen on the turret and the hull. Also of interest is the storage of a spare wheel and tire on the hull side; later vehicles such as the Sd.Kfz.234 series, had a purpose-built rack added at the rear end. This armored car carries a thin white-outline balkenkreuz on the turret, which is an unusual location.

This is the front view of a late-production Sd.Kfz.232. Although the "Sternantenne" is not visible, this vehicle is identified as a '232 by the location of the second small rod antenna on the turret side. Late-production features include the tubular bumper on the lower bow, the visors (note that the visor formerly seen on the front side of the turret is no longer present; compare to an earlier photo), the flush single-piece hatch on the glacis and the 2cm KwK38. This SS vehicle is finished in the three-tone scheme introduced in 1943.

This Sd.Kfz.263 heavy armored radio car shows a rare view of the early-war two-tone camouflage, thanks to its pristine appearance and the angle of the sun. Note the canvas-covered "Kurbelmast" (telescoping antenna mast) behind the upper superstructure, and the un-covered standard head-lamps. Note also the frame for a command pennant as well as the wire lead coming from the "Rahmenantenne" (frame antenna) to the superstructure, next to the split roof hatches.

Seen on a road probably during the French Campaign, this Sd.Kfz.263 offers a good look at how the "Rahmenantenne" curves at one point in order to provide clearance for the "Kurbelmast", which in this photo, is under its canvas cover. The only marking visible is the Wehrmacht Heeres-prefixed license plate. Note also the hinges on the upper glacis plate for the hatch; compare these to the previous photo of the late-production Sd.Kfz.232.

This Sd.Kfz.263 contains later features, notably the visors, which were of a standardized, cast design that dispensed with the need for rain gutters above them. It is finished in a very worn white-wash over what should be a base of dunkelgrau. The tactical sign signifies a headquarters element from either a motorized infantry battalion or motorcycle reconnaissance battalion. An Sd.Kfz.223 follows behind.

Germany used many captured wheeled vehicles, including armored cars. Here, an ex-French AMD (Auto Mitrilleuse de Decouverte) Panhard 178 2eme Serie, has been knocked-out while in German hands. This armored car was captured during the French Campaign and immediately put to use against its former owners. Note the large white-outline balkenkreuz national markings on the glacis and turret front plate, as well as the tactical sign for a motorized anti-tank company and the large "WH" on the lower front plate. A group of German soldiers inspect the vehicle; note the penetrations on the glacis plate as well as the shattered driver's visor.

In this second photograph of the same vehicle, a German soldier pays his respects to the markers of the three Germans who died in the Panhard 178. Note the three wooden crosses, the three helmets and the Nazi flag spread out on the ground as a makeshift shrine. This is a 2eme Serie (2nd Series) production version of the Panhard 178, as can be seen by the lack of the large antenna bases fore and aft. After the end of the French Campaign, numbers of these well-designed armored cars were captured and wound up in German service where they were designated Panzerspähwagen P204(f)

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